DOCUMENT RESUME

ED 130 018 CE 008 154

AUTHOR Wool, Harold
TITLE The Labor Supply for Lower Level Occupations. R&D Monograph 42.
INSTITUTION National Planning Association, Washington, D.C.
SPONS AGENCY Employment and Training Administration (DOL), Washington, D.C.
PUB DATE 76
NOTE 116p.; Table 10 (Reduced Form Wage Equation Elasticities...), will not reproduce well due to small type
AVAILABLE FROM Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 (Stock Number 029-000-00266-5, $1.85)

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS *Employment Projections; *Employment Trends; History; *Labor Force; Labor Market; *Labor Supply; *Manpower Needs; Occupational Surveys; Socioeconomic Influences; *Unskilled Occupations; Wages

ABSTRACT

This monograph systematically explores the implications of changes in the composition of the labor force and of related socioeconomic trends for the availability of workers in lower level occupations (mainly less skilled and/or lower wage blue-collar and service jobs), and assesses the forms of labor market adjustment to be expected, in the event that the projected demands for workers in these occupations exceed the expected supply. After a brief introduction (Chapter 1), findings are summarized as follows: Chapter 2 describes the criteria used to identify "lower level" occupations for this study; Chapter 3 provides a broad historical perspective on past sources of workers for these occupations; the occupational and labor supply trends in the 1960-70 decade are described in more detail in Chapter 4; Chapter 5 analyzes the relationship between labor supply factors and relative wages in lower level occupations, based on recent experience; Chapter 6 gives the implications of projected changes in the size and composition of the labor force to 1985 for availability of workers in these occupations; Chapter 7 examines recent employment trends in four selected lower level occupations on a "case study" basis, to provide more insight as to the factors which may influence future adjustments to changes in worker availability for those and similar jobs; some of the manpower policy implications of the study are discussed in Chapter 7; and Chapter 8 presents an assessed outlook for lower level employment and includes the National Planning Association's (NPA) policy recommendations. (WL)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

ED130018

The Labor Supply For Lower Level Occupations

R&D Monograph 42
W.J. Usery, Jr., Secretary
Employment and Training Administration
William H. Kolberg
Assistant Secretary for Employment and Training
1976

This report was prepared by Harold Wool of the National Planning Association under purchase order with the Employment and Training Administration, U.S. Department of Labor, under authority of the Comprehensive Employment and Training Act of 1973. Researchers undertaking such projects are encouraged to express their own judgment. Their interpretations or viewpoints do not necessarily represent the official position or policy of the Labor Department. The author is solely responsible for the contents of the report.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

For sale by the Superintendent of Documents
U.S. Government Printing Office, Washington, D.C. 20402
Price $1.85
Stock No. 029-000-00266-5

CE 008 154

Material contained in this publication is in the public domain and may be reproduced, fully or partially, without permission of the Federal Government. Source credit is requested but not required.

On November 12, 1975, the Secretary of Labor announced a change in name from the Manpower Administration (MA) to the Employment and Training Administration (ETA). Program activities and responsibilities are not affected.

PREFACE

This monograph is based on a report of the same title, prepared under Department of Labor Grant 21-11-73-02 to the National Planning Association, Washington, D.C. 1/ The study was conducted by Harold Wool, with the assistance of Bruce D. Phillips. Mr. Wool is also the author of the monograph.

The author wishes to acknowledge, particularly, the technical advice of Mark Kendall of the National Planning Association, in connection with various econometric analyses and projections appearing in this study. Findings of supplementary papers on two key occupations--domestic maids by Peter Mattila, and hospital attendants by Neal Rosenthal and Dixie Sommers--are also summarized in chapter VI of this monograph.

Researchers undertaking projects under Department of Labor research grants are encouraged to express their own judgment. Their interpretations or viewpoints do not necessarily represent the official position or policy of the Labor Department. The authors are solely responsible for the contents of the report.

1/ The full text of this study is scheduled for publication this year by Praeger Publishers, Inc., New York.

CONTENTS

		Page
I.	INTRODUCTION	1
II.	IDENTIFYING THE LOWER LEVEL OCCUPATIONS	3
	Existing Occupational Classifications	3
	An Alternative Approach to Identification of Lower Level Occupations	4
III.	CHANGING SOURCES OF LOWER LEVEL MANPOWER: A HISTORICAL PERSPECTIVE	13
	Pre-Civil War Period	13
	The Era of Mass Immigration	14
	World War I to 1960	16
	Summary	25
IV.	TRENDS IN OCCUPATIONAL LABOR SUPPLY, 1960-70	29
	Labor Market Developments	29
	Changes in Occupational Distribution of Socio-demographic Group	30
	Occupational Status Indices	35
	Occupational Composition	39
	Summary	47
V.	LABOR SUPPLY AND OCCUPATIONAL WAGE DIFFERENTIALS	49
	Introduction	49
	Occupational Wage Trends, 1960-70	50
	Interarea Differences in Relative Wages	54
	Some Tentative Conclusions	62
VI.	PROJECTIONS OF OCCUPATIONAL LABOR SUPPLY AND DEMAND TO 1985	65
	Introduction	65
	Occupational Labor Force Projections	65
	Projected Distribution of Labor Force by Occupation	68
	Reliability of Occupational Projections	76
	Labor Market Implications	79

CONTENTS
(continued)

		Page
VII.	ALTERNATIVE PATTERNS OF LABOR MARKET ADJUSTMENT: FOUR CASE STUDIES	81
	Introduction	81
	Household Maids	81
	Apparel Industry Operatives	85
	Construction Laborers	92
	Hospital Attendants	99
VIII.	THE OUTLOOK FOR LOWER LEVEL EMPLOYMENT: AN ASSESSMENT AND SOME POLICY IMPLICATIONS	105
	Major Findings	105
	Policy Implications	106
	NPA Policy Recommendations	109

I. INTRODUCTION

Much of the voluminous literature on occupations in the American labor force has focused on the higher status occupations, particularly the professionals, the managers, and the technicians. This emphasis is understandable, since these have been the "growth" occupations in our society. They are the ones to which most young people aspire and which call for the greatest investment in terms of formal education and specialized training.

However, any realistic assessment of the structure of jobs in the contemporary American economy indicates that many millions of American workers still occupy jobs which do not fit into the preferred categories. The least desirable of these jobs have many of the following characteristics: Low pay, low skill requirements, limited training or advancement opportunities, boring or menial duties, and poor working conditions. Conceptually, these occupations tend to be the "jobs of last resort" in the labor market.

With limited exceptions, the supply of workers for most of these jobs has been more than adequate until now. Disadvantaged population groups, including blacks, recent immigrants, and farm-to-city migrants, have provided a relatively large share of the workers for these jobs, as have women and youth.

The point of departure for the present study is a premise that a confluence of economic, social, and demographic force may contribute to a sharp reduction in these sources of "low level" manpower. Some of these trends have already been evident in recent decades--notably, the broadening of occupational opportunities for blacks and other minority workers, the increase in educational attainment of the labor force, and a steady depletion in reserves of underutilized rural manpower. Rising levels of family income, including welfare and other transfer payments, have also given many potential workers an effective choice of abstaining from work activities in preference to accepting low-wage, demeaning types of work.

It is reasonable to expect that many of these trends will continue. Their effect will be intensified, moreover, by the predictable reduction in the number of new entrants into the labor force in the 1980's, as a result of the sharp birth rate decline of the past decade. This will tend to further deplete the potential labor supply for lower level jobs and--more generally--can contribute to restoration of conditions of full or near-full employment.

A potential reduction in the supply of workers for "low level" jobs does not necessarily imply that "shortages" will develop for this category of labor. This will depend, of course, upon concurrent trends in the demand for labor in such occupations, which--in turn--will be influenced by a large number of exogenous forces, including technological trends and changes in the distribution of demand for various categories of goods and services. Moreover, to the extent that demand for workers in a given occupation is wage-elastic, a reduction in supply will, of itself, tend to reduce the effective demand through operation of normal market processes.

Against this backdrop, therefore, the objective of this monograph is to systematically explore the implications of changes in the composition of the labor force and of related socioeconomic trends for the availability of workers in lower level occupations and to assess the forms of labor market adjustment to be expected, in the event that the projected demand for workers in these occupations exceeds the expected supply. The findings are summarized in the following chapters:

Chapter I describes the criteria used to identify "lower level" occupations for this study.

Chapter II provides a broad historical perspective on past sources of workers for these occupations.

Chapter III describes in more detail the occupational and labor supply trends in the 1960-70 decade.

Chapter IV analyzes the relationship between labor supply factors and relative wages in lower level occupations, based on recent experience.

Chapter V projects the implications of projected changes in the size and composition of the labor force to 1985 for availability of workers in these occupations.

Chapter VI examines recent employment trends in four selected lower level occupations on a "case study" basis, to provide more insight as to the factors which may influence future adjustments to changes in worker availability for these and similar jobs.

Chapter VII discusses some of the manpower policy implications of the study.

II. IDENTIFYING THE LOWER LEVEL OCCUPATIONS

EXISTING OCCUPATIONAL CLASSIFICATIONS

The existence of a broad hierarchy of occupations, closely linked to both social status and material rewards, has been a basic characteristic of human societies. For this reason, social scientists have devoted considerable effort to development of systems for ranking of occupations and to related studies of factors contributing to differences in occupational status. Three existing systematic approaches to analysis of occupational structures are based on: (1) Job contents analysis, (2) analysis of occupational wage differentials, and (3) occupational prestige or status rankings.

1. Job contents analysis-- This approach is designed to provide detailed scalings or groupings of occupations for operational use in personnel counseling, selection, training, and compensation. This method analyzes tasks performed, knowledge and aptitude requirements, and the amount of training or education needed for various positions. It attempts to scale the various occupations in order of difficulty based on one or more of these criteria. The Dictionary of Occupational Titles and related "worker trait" profiles illustrate this approach.

2. Occupational wage analysis-- The causes of occupational wage differentials have long been a focus of interest in economic literature. Most economists, while recognizing that occupations differ in both pecuniary and nonpecuniary rewards, have tended to focus their attention on the former. Low-wage jobs have often been treated as synonymous with "bad" jobs, in such studies.

3. Occupational prestige or status-- Sociological theory has relied heavily upon occupational position as the prime determinant of social status. Occupational prestige surveys have been conducted, for this reason, in an effort to obtain a single ranking or hierarchy of occupations, based on the composite judgment of a population cross-section, in which each respondent ranks each of a particular list of occupations, in terms of relative standing. Despite many differences in methodology, the resulting overall rankings have been found to be reasonably consistent over a period of decades and in surveys made among different countries or population groups.

A major limitation of this method, however, is that this technique can be applied--at any one time--to only a limited list of occupations. To meet the need for a social class ranking system which could be systematically applied to all census occupations, Otis Duncan developed an index of "social-economic status" (S.E.S.) based on a weighting of two variables, education and annual income, derived from census data for male workers. This index was found to be closely correlated with results of occupational prestige surveys for comparable occupations and has been extensively used in studies designed to measure social status of individual or their families.

In addition to the above systematic approaches to occupational ranking, the grouping and orderings of occupations followed by the Bureau of the Census in its standard statistical presentations have certain implicit status or rank connotations. The Bureau of the Census classifies the many thousands of separate jobs or position titles reported by workers into a limited number of "detailed" occupations--441 in 1970. These are further combined into 11 major occupational groups and, at times, into 4 broader occupational classes of white-collar workers, blue-collar workers, service workers, and farmworkers.

A review of the origins of the present census groups indicates that they represented an attempt to combine into one classification scheme criteria based upon similarity of work performed, i.e., occupational tasks or functions, and similarity in the socioeconomic level of various occupations. The nature and difficulty of the tasks or functions performed serve generally as the basis for the definition of the detailed occupations and for the combination of these into the major occupation groups. Socioeconomic criteria, such as earnings and education, have also influenced the latter groupings, as well as the implicit ranking of these occupational groups or classes. Thus, white-collar workers are conventionally placed "above" blue-collar workers and--within the latter--craft workers and supervisors are given precedence over the operatives and laborer groups, in turn.

Since these census groups were developed pragmatically to serve a wide range of possible interests, they have not proved ideal for any specific research or analytical design--whether for economic analysis of wage structures or for studies of social class structures. One of the major limitations of the census groups, for the present study, was the heterogenous nature of certain of the major occupational groups. For example, the census group, "Service Workers, excluding Household Workers" encompasses a particularly wide range of jobs, from relatively high status positions such as police chiefs or sheriffs down to very low status jobs, such as charwomen and bootblacks.

Certain of the other available occupational classification criteria, described above, were also considered unsuitable for the present study, because they could not be linked satisfactorily with the full range of detailed census occupations, which provide the primary source of data on the occupational distribution of the labor force. More fundamentally, none of the available criteria had been designed to provide a "labor-supply relevant" ranking of occupations. Neither job contents alone, nor wages alone, nor occupational prestige alone--even if accurately measured by their respective scales--could purport to reflect the full range of factors which influence occupational choices of workers.

AN ALTERNATIVE APPROACH TO IDENTIFICATION OF LOWER LEVEL OCCUPATIONS

As an alternative to the above approaches, the point of departure adopted in the present study was the premise that different groups of workers have had widely differing ranges of job options in the

contemporary labor market. Thus, employers have generally tended to favor whites over nonwhites, those with at least a high school diploma over those with lesser education, and adults over youth. In many industries and occupations, employers also have given systematic job preference to men over women. These differentials in labor market opportunity are illustrated by the prevailing pattern of unemployment rate differentials. For example, the unemployment rate for black youth, aged 18-24 years, and high school dropouts, was 21 percent in March 1970, or more than 10 times as great as the rate for white workers, 25 years and over, who had completed one or more years of college.

A second premise is that workers do, in fact, have a collective occupational preference schedule which reflects their assessments--in Adam Smith's words--of "the sum of the advantages and disadvantages" of different occupations. Recent surveys of career goals of high school youth have thus shown that most young people aspire to the more elite professional, managerial, and skilled occupations, while very few look forward to entering the unskilled or semiskilled blue-collar, service, or farming occupations.

If these premises are valid, statistics on the degree of concentration in the various occupations of those workers who have the broadest job options should provide a sensitive measure of occupational preferences of American workers generally. Occupations which have the largest proportions of such workers are likely to be the most desirable; those with the smallest proportions, the least desirable ones.

The specific occupational index used for the present study was based on the percentage of white workers with 12 or more years of education, in each occupation, for the age group 25-34 years. This was computed for each of 57 occupations or occupation-industry groupings, from the census public-use sample for 1960. The occupational combinations selected covered the full range of occupations reported by the census and were designed to minimize problems of comparability, resulting from major revisions in census occupational classification and enumeration procedures between 1960 and 1970. This index directly reflects the combined effect of two major worker characteristics affecting job opportunities--race and education. The selection of a single age group, those 25 to 34 years old in 1960, was designed to eliminate the effect of differences in rankings due solely to differences in the age distribution of workers in various occupations and--at the same time--to reflect occupational choices made by younger adult workers in the years immediately preceding 1960. The index was computed for both sexes, combined. However, subsequent tests of a "sex-standardized" index revealed no significant difference in resulting occupational rankings.

The ranking of occupations, based on this index, is shown in table 1, together with their percentile scores derived from the size of the experienced civilian labor force in each occupation in 1960. These

percentile scores are compared with the percentile rankings adapted from two other occupational rankings, the Duncan social-economic status index and an index of occupational prestige, by Paul Siegal, based on composite results of a series of separate prestige surveys. Despite major differences in the criteria employed, these comparisons produced relatively high correlations (R) of .923 and .843, respectively. A separate correlation between the labor force composition and mean full-time earnings in 1960, holding sex constant, produced a lower correlation (R=.735), probably reflecting the many nonpay factors which enter into occupational preferences.

Based on this index, the 57 occupations used for this analysis have been combined into five broad occupational status groups. The two higher level groups, groups I and II, encompass--with limited exceptions--the census white-collar occupational categories. Group I corresponds to the census group, "Professional, Technical, and Kindred" workers. Group II includes most remaining white-collar occupations, as well as policemen, firemen, and certain allied protective service occupations.

Group III, which represents the middle-range in the status grouping, includes foremen; most of the craft and mechanical occupations; farmers; operatives in certain high-wage industries and the more skilled service occupations, e.g., barbers, bartenders, practical nurses.

The lower level status groups, groups IV and V, encompass mainly the less skilled and/or lower wage blue-collar and service jobs. Group IV includes certain of the lower paid craft and mechanical occupations; most of the operative jobs; certain low-skilled clerical occupations, such as shipping clerks; service occupations such as hospital attendants, waiters, and housekeepers, and laborers in the metalworking industries. Group V, in turn, includes all other hired laborer jobs, both farm and nonfarm; laundry and dry cleaning operatives; domestic workers (other than housekeepers and babysitters) and other personal service workers, such as cooks and kitchen workers, janitors, charwomen, and cleaners.

Table 1
Selected Occupational Status Indices

Occupation and Status Group	Occupational status indices (percentile ranks)				
	ECLF 1960 (000) 1/	Labor force composition 2/	Socio-economic status 3/	Prestige 4/	Mean earnings, full time 1960 5/
STATUS GROUP I					
Engineers	870	97.8	96	95	8478
All other professional and technical workers 6/	3448	90.3	91	90	6448
Teachers, exc. college	1682	87.0	92	92	5240
Medical personnel 7/	1325	84.6	86	95	5082
STATUS GROUP II					
Bookkeepers	940	83.1	79	81	3685
Secretaries, typists, stenos.	2312	79.6	86	71	3801
All other sales workers, exc. retail clerks	2088	75.6	83	57	6554
Nonfarm managers, total	5489	69.0	86	83	8087
All other clerical and kindred workers 8/	2437	61.8	82	52*	--
Office machine operators	315	61.1	74	75	4112
Telephone operators	369	60.4	74	67	3695
Policemen, firemen, etc. 9/	426	59.3	63	75	5383
Sales clerks, retail trade	2720	56.9	67	34*	3283
Cashiers	495	56.3	73	36	3171
Postal clerks, mail carriers	423	55.6	77	66	5306
STATUS GROUP III					
Foremen, n.e.c.	1198	54.1	77	75*	6679
All other craft workers 10/	1879	51.1	63	52*	5771
Mechanics, exc. auto	1594	48.3	56	46	5243
Deliverymen, routemen	441	47.5	57	30	4190
Metalworking, crafts, exc. mechanics, machinists	607	45.6	61	56	5932
Farmers, farm managers, unpaid farm workers	2812	43.9	31	58	3023

Footnotes at end of table.

Table 1
Selected Occupational Status Indices
(cont'd)

Occupation and Status Group	Occupational status indices (percentile ranks) ECLF 1960 (000) 1/	Labor force composition 2/	Socio-economic status 3/	4/ Prestige	Mean earnings, full time 1960 5/
Electricians, brick-masons, excavating machine operators, etc. 11/	1239	41.7	62	58	5604
Machinists	516	40.9	58	82	5696
Checkers, examiners	518	40.2	37	48	4614
Operatives, nondurable goods mfg., inc. chemical petroleum industries, etc. 12/	832	38.5	45	23	--
Barbers, bartenders, practical nurses, etc. 13/	1431	36.9	49	31	3558
Operatives, transport equipment mfg.	538	35.8	50	53	5520
Carpenters	924	34.4	44	60	5008
STATUS GROUP IV					
Taxi drivers, bus drivers, etc. 14/	422	33.8	37	31	--
Auto mechanics	705	32.4	44	57	4229
Operatives, nonmanufacturing industries, total	1776	29.4	46	18	4548
Auto service and parking attendants	379	28.8	44	17*	3185
Operatives, metal working industries 15/	2028	25.4	52	55*	4786
Guards and watchmen, crossing guards and bridge tenders	281	25.2	40	17*	4412
Housekeepers and babysitters	506	24.8	20	28	1096
Housekeepers	152		(44)	(46)	--
Babysitters	354		(10)	(20)*	--
Waiters and counter and fountain workers	1063	23.2	31	13	2118
Shipping and receiving clerks, messengers and office boys	357	22.0	52	27	4419

Foonotes at end of table

Table 1
Selected Occupational Status Indices
(cont'd)

Occupation and Status Group	Occupational status indices (percentile ranks)				
	ECLF 1960 (000) 1/	Labor force composition 2/	Socio-economic status 3/	Prestige 4/	Mean earnings, full time 1960 5/
Laborers, metal working industries 16/	399	21.8	N.A.	N.A.	4582
Operatives, - food and tobacco industries	555	20.9	33	21*	--
Construction painters, plasters, cement and concrete finishers, roofers, paperhangers	589	20.0	35	36*	4686
Hospital attendants	408	19.3	20	41*	2661
Truck and tractor drivers	1663	15.4	30	38*	4696
Operatives, textiles, apparel, leather industries	1826	12.8	17	25	3119
Packers	497	12.0	41	10	3674
Welders, flamecutters	390	11.3	53	60	5460
Operatives, lumber, furniture, stone, clay and glass industries	578	10.4	30	23*	4096
STATUS GROUP V					
Laborers, nonmanufacturing industries, exc. constr.	1407	8.6	N.A.	N.A.	3478
Janitors, sextons	624	8.1	15	7*	3184
Cooks	599	7.4	15	24	2916
Construction laborers	776	6.1	N.A.	N.A.	3805
Laborers, lumber, furniture, stone, clay and glass industries	373	5.6	N.A.	N.A.	4077
Laborers, nondurable goods mfg. 17/	346	5.1	N.A.	N.A.	4062*
Farm laborers, paid	1241	3.3	09	13*	2163
Kitchen workers	332	3.0	18	17	2302
Laundry and dry cleaning ops.	410	2.5	30	10	2248
Cleaners and charwomen, porters, chambermaids, elevator operators	610	1.8	09	07	2425
Private household workers, n.e.c.	1310	0.3	10	10	1116

Foonotes at end of table.

Footnotes to Table 1

1/ The experienced civilian labor force, by occupation, was computed from the recoded 1/1000 1960 Census Public Use Sample tape, released July 1971.

2/ Based on percentage of white workers, with 12 or more years of education in the experienced civilian labor force, of each occupation for the age group 25-34 years, in 1960, derived from the 1/1000 sample of the Public Use tape.

3/ The socioeconomic status percentile scores were derived from Otis Dudley Duncan, "Socioeconomic Status Scores for Detailed Occupations." University of Chicago, Population Research and Training Center, October 1961, with appropriate interpolations. Occupation/industry coverage not precisely comparable.

4/ The prestige percentile scores are from Paul M. Siegel, "Prestige in the American Occupational Structure," unpublished Ph.D. thesis, Department of Sociology, University of Chicago, March 1971, with appropriate interpolations. Asterisked items had a poor match between the census occupation title and the actual title rated in the Hodge-Siegal Prestige surveys.

5/ Wage and salary income of workers employed 35 hours or more in Census reference week and who were employed 48 weeks or more in 1959.

6/ Includes all other professional and technical workers not elsewhere classified.

7/ Includes physicians, dentists, medical and dental technicians, and all other health occupations classified as professional.

8/ Includes all other clerical and kindred workers not elsewhere classified.

9/ Includes policemen, firemen, marshals, constables, sheriffs, and bailiffs.

10/ Includes all other craft workers not elsewhere classified.

11/ Includes electricians, brickmasons, excavating, grading, and road machinery operators, plumbers, pipefitters, and structural metalworkers.

12/ Includes operatives not elsewhere classified in the following nondurable goods industries: Paper and allied products, printing

Footnotes to Table 1
(continued)

and publishing, chemicals and allied products, petroleum and coal products, rubber and plastic products, not specified nondurable manufacturing.

13/ Includes barbers, bartenders, practical nurses, attendants, recreation and amusement workers, ushers, and all other service workers not elasewhere classified.

14/ Includes taxi drivers, bus drivers, rail conductors, subway motormen, mine motormen, railroad brakemen, railroad switchmen, and boatmen and canalmen.

15/ Includes operatives, not elsewhere classified, in the following industries: Metal industries; machinery, except electrical; electrical machinery; professional and photographic equipment; miscellaneous manufacturing.

16/ Same industrial distribution as for operatives in footnote 15.

17/ Includes laborers in all nondurable goods industries.

III. CHANGING SOURCES OF LOWER LEVEL MANPOWER: A HISTORICAL PERSPECTIVE

PRE-CIVIL WAR PERIOD

The emergence of large-scale requirements for "lower level manpower" coincided historically with the evolution of forms of economic organization which differentiated between a "laborer," "wage earner," or "servant" class, on the one hand, and an ownership or managerial class, on the other. Such differentiations had long been traditional in the caste and class dominated societies of the Old World. However, one of the unique features of the American experience was the limited and uneven development of a distinctive "laboring" class of free wage earners in the first two centuries following the settlement of the American colonies.

At the beginning of the 19th century, the United States was predominantly an agrarian society, with about three-fourths of its labor force engaged in agricultural activities. In the North, as well as the Piedmont South, the dominant pattern was that of the independent farmer, cultivating his own land with the aid of his own family and occasional hired help. In contrast, the large-scale plantation economy of the South depended almost entirely upon slave labor for its basic work force. Comprehensive occupational statistics for this period are lacking. However, if we define "low level" occupations as including both free and slave laborers employed on farms, as well as hired laborers and service workers in nonfarm activities, it is probable that slave laborers accounted for well over half of the entire work force in lower level occupations during the first two decades of the past century.

Between 1820 and the outbreak of the Civil War, the rapid expansion of industry and trade was accompanied by a nearly fourfold growth in the labor force, to more than 11 million, of whom nearly one-half were engaged in nonagricultural activities by 1860. A major portion of this additional manpower was supplied by a growing stream of free immigrants, drawn almost entirely from the countries of Northern and Western Europe.

Among the immigrant groups of this period, the Irish probably ranked lowest in social status. Their job handicaps, as succinctly described by one observer were that "they were ignorant, poor and held to the Roman Catholic faith." 1/ The Irish early established concentrations in the large Eastern seaboard cities of Boston, New York, and Philadelphia, as well as in smaller New England cities and towns. To a greater degree than other nationality groups in this period, the men provided the unskilled labor for construction of the canals and the first railroads and for similar heavy work in the cities. Their wives and daughters took work in large numbers as domestic servants, as well

as in textile, shoe, and other light manufacturing industries--supplementing the limited indigenous labor resources for these occupations.

In the process, these recent immigrants appeared to have displaced earlier native-born American sources of labor supply for some of these occupations. Thus, the early New England textile mill owners initially recruited young female operatives from local farm families. By the mid-1840's, growing unrest among these girl textile workers, resulting from low wages and excessively long working hours, stimulated the beginning of union organization and contributed to a shift in labor supply to more tractable Irish immigrant labor. 2/

The New England farm girls were, moreover, not the only group of "low level" American workers who felt the sharp bite of immigrant competition. By the mid-1800's, sizable colonies of free Negro workers already existed in the larger northeastern cities where they typically engaged in a variety of personal service or unskilled labor occupations. In advocating the need for vocational training of his fellow black man, Frederick Douglass described the plight of these urban northern Negroes as follows:

> "The old avocations, by which colored men obtained a livelihood, are rapidly, unceasingly and inevitably passing into other hands; every hour sees the black man elbowed out of employment by some newly arrived emigrant, whose hunger and whose color are thought to give him a better title to the place...
>
> "White men are becoming house-servants, cooks and stewards on vessels--at hotels. They are becoming porters, stevedores, woodsawyers, hod-carriers, brick-makers, white-washers and barbers...formerly blacks were almost the exclusive coachmen in wealthy families; this is so no longer; white men are now employed, and for aught we see, they fill their servile station with an obsequiousness as profound as that of the blacks."3/

THE ERA OF MASS IMMIGRATION

The period between the end of the Civil War and World War I was one of very rapid industrialization, concurrent with continued agricultural expansion in the Prairie and West Coast states. The rapid rate of growth of the U.S. economy in this era was made possible in large part by an unprecedented wave of immigration to our borders, supplementing a high rate of natural population increase. The annual inflow of immigrants rose to an average of over 500,000 per year during the decade of the 1880's, dropped temporarily during the 1893-98 depression, and then mounted to record levels averaging more than one million immigrants per year between 1905 and 1914.

During this period, the immigrant flow also changed dramatically in its ethnic composition. Until the decade of the 1890's, a large proportion of the immigrants continued to be drawn from the countries of Northern and Western Europe. However, beginning with the decade of the 1890's, the major portion of the new immigrants came from Southern and Eastern Europe, including heavy concentrations of Slavs, Poles, Italians, and Russian or Polish Jews. In the decade of peak immigration, 1900-1910, these newer nationality groups comprised 70 percent of the total number of immigrants, as contrasted to only 18 percent in the 1880's.

Despite obvious differences in their ethnic and cultural backgrounds, most of these more recent immigrants shared common handicaps of limited formal education, a lack of relevant vocational skills, and significant religious and cultural barriers between themselves and the predominant Northern and Western European stocks who had preceded them. Moreover, with the closing of the frontier, they entered in a period when employment opportunities were largely concentrated in the growing urban industrial centers and in mining, rather than in agriculture. Since the more desirable of the jobs in these industries had been preempted by the native populations, these newcomers, like their more disadvantaged predecessors, were relegated, disproportionately, to the less desirable unskilled and semiskilled laborer jobs.

Throughout this period of mass immigration, the black worker, although now a "freed man," maintained his uneviable status at the bottom of the occupational ladder. In 1910, about 90 percent of the Negro workers were still in the South and nearly three-fourths were confined to the two traditional black occupations of farming and menial service activities. In southern agriculture, their economic status as either sharecroppers or hired laborers was scarcely improved over that of the slave era. In southern as well as northern industry, they were predominantly employed in service-type or laborer jobs.

Based on available census data for 1910, these two disadvantaged groups--the foreign born and nonwhite workers, combined--provided a greater-than-proportionate share of the manpower in each of the lower level census occupational groups. Although they accounted for less than 35 percent of the total 1910 labor force, they represented a majority of the workers in three occupational groups: Private household workers, 58 percent; other service workers, 55 percent; and nonfarm laborers, 54 percent. They also accounted for a somewhat greater than average share of the labor force in the two other lower level occupational groups, i.e., operatives and farm laborers.

Although the white immigrants shared certain common handicaps with the native black population, these handicaps differed in degree and were reflected in marked contrasts in their respective occupational distributions. The foreign-born white population contributed only a small proportion of the farm labor force. The Negroes, on the other hand,

had continued to be heavily concentrated in southern agriculture, where they were locked in by the limited employment opportunities available to them elsewhere as well as by the sharecropper system, which had imposed a condition of financial "servitude" upon them.

In the nonfarm sector, both white foreign born and Negro workers were heavily represented among unskilled laborers, among domestic servants, and in other personal service occupations. However, whereas foreign-born workers contributed a relatively large proportion of the labor supply for the operatives and craft occupational groups and in certain lines of small business--and in fact dominated certain of these industries or trades--relatively few of the Negroes had gained entry to such occupations as of 1910, except where they entailed particularly onerous working conditions.

The extent to which the Negro worker was differentially concentrated in the lower level occupations, as we have defined them, is indicated by an occupational distribution of nonwhite workers as of 1910, grouped in accordance with our five broad occupational status groups. Over two-thirds of all Negro workers were in Group V occupations and 93 percent were in the Group IV and Group V classes combined. The Negro woman was even more constrained in her occupational range than the Negro man: over 85 percent of nonwhite women in 1910 were in Group V occupations, mainly domestic service and other personal service jobs and in farm labor. (Table 2.)

WORLD WAR I TO 1960

The half century which elapsed between the beginning of World War I witnessed profound transformations in the Nation's economy and in the occupational distribution of its labor force. Technological advances in agriculture, industry, transportation, and other sectors of the economy resulted in a sharp reduction in the proportion of workers required for heavy manual labor. In agriculture, the result was a sharp decline in the proportion of the labor force engaged in farm occupations, from 31 percent in 1910 to 6 percent in 1960. In industry, many jobs previously performed by unskilled laborers were eliminated or converted to machine tending or machine operating functions. As a result, the proportion of nonfarm laborers in the work force fell from 12 percent in 1910 to 5.5 percent in 1960, while the operatives occupations, as well as mechanics and repairmen, increased their proportion of total jobs. In the household economy, the proliferation of labor-saving household appliances, the shift of many household functions to commercial market sources, and reductions in family size all contributed to a reduction in the percentage of workers in private household occupations, from 5.0 percent in 1910 to 2.8 percent in 1960. In contrast, the proportion of "other" service workers rose from 4.6 percent in 1910 to 8.9 percent in 1960.

Table 2

Percentage Distribution of Nonwhite Workers by Occupational Status Group: 1910, 1950, and 1960

Occupation Group	Both Sexes			Male			Female		
	1910	1950	1960	1910	1950	1960	1910	1950	1960
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Group I	1.5	3.2	5.5	1.3	2.2	4.0	1.6	5.2	7.7
Group II	1.8	6.9	10.8	2.5	6.9	9.9	0.9	7.3	12.4
Group III	3.7	11.1	13.0	5.2	11.1	14.7	1.5	10.3	10.7
Group IV	25.6	29.2	27.2	32.6	36.8	33.1	10.5	15.5	17.9
Group V	67.4	49.6	43.5	58.4	43.0	38.3	85.5	61.7	51.3

Sources: Adapted from Censuses of Populations and Alba M. Edwards, Comparative Occupation Statistics for the United States: 1970-1940 (Washington, Government Printing Office, 1943).

A concomitant of these developments was a rapid growth in white-collar occupations. These included many new professional, technical, managerial, and clerical specialties needed to develop and apply the results of modern science and technology and to service the record keeping, communications, and control needs of increasingly complex organizations. The most rapid growth was among the professional, technical, and clerical occupations, with smaller increases in the group of managers, officials, and proprietors, and of sales workers. Within the managerial group, moreover, there was a major shift from proprietors to salaried managers and officials.

The net effect of these changes was a pronounced upgrading in the occupational distribution of the labor force. The combined proportion of workers in the laborer category (farm and nonfarm) and in private household occupations declined from about 26 percent in 1910 to less than 8 percent in 1960. Even if the latter occupations were combined with the expanding operatives and service worker occupational groups, the net decline in this broader category was still very substantial, i.e., from 51 percent in 1910 to 39 percent in 1960.

These trends developed unevenly over this 50-year period, punctuated--as it was--by three major wars and by alternating periods of prosperity and depression. For example, during the depression decade of the 1930's, the decline in the proportion of hired farm laborers slowed down appreciably, while the proportion of domestics actually increased. In the decade of the 1940's, the World War II mobilization and the continued high levels of economic activity in the immediate post-war period were reflected in particularly sharp reductions in the proportion of workers in the laborer and domestic service occupational groups.

IMMIGRATION TRENDS

The transformations in occupational structures described above were accompanied by equally dramatic shifts in sources of labor supply. Until the 1920's, our national policy had been one of virtually unrestricted immigration. A dominant consideration during the early 1900's was the continuing need of industry for a large supply of unskilled manual workers: "Employers, during the period of industrial development after 1898 wanted labor--abundant labor, cheap labor, strong backed labor, in large measure, common labor, and always docile labor."4/

With the outbreak of World War I in Europe, the mass entry of immigrants was, however, suspended. Legislation enacted in 1921 and 1924 established immigration quotas whose effect was to severely curtail the overall number of new immigrants, particularly from the countries of Southern and Eastern Europe.

The 1924 act was to continue as the basic statutory framework of U.S. immigration policy for a period of more than four decades. It was subject to numerous amendments and modifications in the light of changing exigencies--notably to permit importation of contract agricultural labor, mainly from Mexico, during and immediately after World War II (the "bracero" program) and to facilitate immigration of war brides and various displaced persons or refugee groups. In addition, in 1952, special preference within quota limits was provided for individuals with specialized skills or abilities.

Following enactment of the 1924 law, immigration fell to a rate of about 300,000 per year from 1925 to 1929; it remained well below 100,000 per year during the depression decade of the 1930's and the World War II period, and--despite special nonquota provisions for war brides and certain refugee groups--averaged only about 250,000 per year in the decade of the 1950's. As a result of the national origin quota system and other special provisions, the percentage of immigrants from the favored nationality groups, including those from Northern and Western Europe and from Canada (to whom no quota applied), rose from less than one-fourth of the total in the 1901-1910 decade to 54 percent in 1921-30 and 60 percent in 1951-60. At the same time, immigration from Mexico, the West Indies, and other Latin American countries, which in common with Canada was not subject to quota limitation during this period, rose from only 2 percent of the total in 1901-1910 and to about one-fourth in the 1951-60 decade. This was supplemented, moreover, by an increased flow of illegal immigrants, mainly across the Mexican border--the so-called wetbacks.

The extent to which these trends affected the contribution of immigrants to the labor supply of the various occupations is suggested by available census data. By 1950, the percentage of foreign-born whites in the labor force had been reduced to 8.2 percent as compared with 20.9 percent in 1910--a consequence of the post-World War I reduction in new immigration and of attrition from the labor force of the large cohorts of immigrants who had entered in earlier decades. Analysis of the proportion of foreign born in each major occupational group indicates that in spite of the higher level occupational background of more recent immigrants and of the occupational upgrading of many who had arrived in this country early in their working lives, the foreign born continued to be underrepresented in most of the preferred white-collar occupations and continued to be overrepresented in most of the lower level occupational groups.

There were, however, significant shifts in relative concentration of the foreign-born workers by occupational group. Among the higher level occupations, foreign-born workers increased their relative proportions, compared with 1910, in the nonfarm managerial and proprietor group, in professional and technical occupations, and in sales

jobs. Among the lower level occupational groups, the most significant shifts were sharp declines in the relative proportions of foreign-born in the nonfarm laborer and operative groups and in private household occupations and a relative increase in the farm laborer groups--the latter reflecting the large-scale immigration of Mexican farmworkers into the Southwestern States.

The Role of Internal Migration

The reversal of American immigration policy in the early 1920's was prompted, in part, by a number of ideological and political pressures. However, the fact that this policy was maintained for a period of five decades can be attributed mainly to the development of alternative, internal sources of labor supply to meet the changing manpower needs of the post-World War I era. The most important of these sources was a large and growing volume of migration from the farms. The rural population, with its historically high natural growth rate, had probably always provided a significant source of manpower recruitment for industry and for other urban employment, beginning with the early decades of the 19th century. However, until the turn of the century, the continued substantial growth of the rural population (then mainly composed of farm residents) suggests that net migration from farm to city was of modest dimensions.

Estimates of the volume of these flows are available only for the period since 1910. These indicate that, for the decade 1910-20, as a whole, approximately 5 million persons moved from farms to nonfarm areas. A major portion of the farm-to-city migration in this decade was concentrated during the World War I period, in response to the sharp growth in urban employment opportunities created by expanding war employment and the virtual stoppage of immigration. Net migration from farms continued at a high rate in the decade of the 1920's, was temporarily slowed down during the depression decade of the 1930's (with some net reverse flow in 1931-32), and then reached its crescendo in the wartime decade of the 1940's, when a total of 10.6 million persons were drawn from farms to provide manpower for the World War II industrial mobilization and for the Armed Forces. It continued, moreover, near peak levels in the decade of the 1950's, when an additional 9.6 million persons moved from farm to nonfarm areas. As a result, the resident farm population was reduced by more than one-half from its pre-World War I peak of 32.5 million in 1916 to 15.6 million in 1960.

Of particular significance, for our review of sources of manpower for lower level jobs, was the major role played by Negroes in the mass movement from farm to city. For five decades following their emancipation, the black population had remained highly concentrated in the rural South. In 1860, 90 percent of Negroes lived in the South (i.e., in the South Atlantic, East South Central, and South Central States);

50 years later, in 1910, 80 percent were still in the South. The limited movement of the Negro population out of the rural South during the half century from 1860 to 1910 was directly related to the ready availability of large masses of white immigrants to northern employers. Although the "push" of poverty and discrimination had been relatively constant factors in the condition of the southern Negro population, the "pull" of job opportunity for them in the North had not yet emerged.

This situation was reversed by the stoppage of immigration during World War I and the sharp expansion of wartime manpower needs. Northern employers turned to the South and particularly to the southern Negro to fill the void left by the suspended inflow of Italians, Slavs, and other recent immigrant groups. The World War witnessed the first large-scale inflow into what were soon to become the "black ghettos" of our northern metropolises.

The initial momentum of Negro migration from the farm achieved during the first World War was maintained through the decade of the 1920's; it slowed down during the depression and then reached very large proportions in the 1940's and 1950's, concurrent with sharp reductions in labor requirements in southern agriculture, associated with introduction of the mechanical cotton picker and diversification of crops. Although the most visible movement of the Negro population was to the northern and western cities, large numbers moved to southern urban centers as well. As a result, by 1960, whereas 60 percent of the Negro population was still residing in the South, 73 percent were living in urban areas, as contrasted to only 27 percent in 1910.

Within the urban economy, the types of jobs available to the Negro immigrants in the decades between 1910 and 1940 were substantially the same as those previously filled by the small resident Negro urban population and by the more disadvantaged of the immigrant groups that had preceded them. By 1940, two-thirds of all Negro workers were in nonfarm occupations, compared with only one-half of the total in 1910. All but a modest percentage of them, however, continued to be engaged in the low-skilled manual occupations: the men, predominantly, as unskilled laborers and service workers; the women, as domestics or in similar menial service occupations. During this period, the proportion employed as operatives or in other semiskilled occupations had also grown gradually, from about 5 to 10 percent of the total. However, very limited inroads had been made by Negro workers into the skilled crafts or the white-collar occupations. In 1910, 11 percent of all Negro nonfarm workers were reported in such occupations; by 1940, this percentage had risen only slightly to 13.5 percent. In contrast, the percentage of white nonfarm workers in these occupations had grown from 51 percent in 1910 to 58 percent in 1940.

The World War II mobilization, with its attendant labor shortages, provided the first significant breakthrough of Negroes into these

higher level occupational fields. The rapid expansion of defense-related employment in industry and government, combined with mobilization of millions of men into the Armed Forces, inevitably opened up a broader range of occupational opportunities for Negro workers. Over this decade, the percentage of Negroes in farm occupations declined from nearly one-third to less than one-fifth of the total. The most significant growth was in the operatives groups, which--by 1950--accounted for over 18 percent of all Negroes in the labor force. Negro men and women also increased their representation in the white-collar and skilled crafts occupations, which together accounted for 18 percent of all Negro nonfarm workers in 1950, compared with 13.5 percent in 1940. The decade of the 1950's, punctuated by the partial mobilization for the Korean war, witnessed a continuation of the trends of the previous decade, as evidenced by further reduction in the percentage of Negroes in farm occupations and additional moderate gains in the operative, craft, and white-collar occupations.

Some further statistics on the net effect of the influences described above on the occupational distribution, by status groups, have been compiled for the years 1910, 1950, and 1960. By the last year, the three highest occupational status groups included 29 percent of the nonwhite labor force, compared with only 7 percent in 1910. In contrast, the percentage of Negroes in the group V occupations declined sharply from 67 percent in 1910 to 44 percent in 1960, mainly reflecting the very sharp reduction in the agriculture labor force. (See table 2.)

Although these statistics confirm that a significant upgrading in occupational status of Negroes did occur, mainly during the 1940-60 decades, nonwhites continued to be significantly underrepresented in nearly all of the higher status group I-III occupations. Among the group IV occupations, they had increased their relative share in most of the operative occupations, in the less skilled construction crafts (painters, roofers, plasterers, etc.) and in the least skilled health service occupations. Nonwhites, moreover, continued--as in the past--to be heavily concentrated in the group V occupational category.

Despite the fact that Negroes continued to supply a relatively large proportion of the labor for the lowest level occupational fields, our summary statistics indicate that the percentage of native white workers in these occupations had also increased as the foreign-born population declined. Native white inmigrants from farm to city, in common with the white immigrants and blacks, contributed disproportionately to the supply of workers for most lower level and lower middle level urban occupations. Thus, on the basis of a special Census survey in March 1962, Blau and Duncan found that men who had moved from rural areas to large cities held occupations significantly lower in status than did those born in cities. However, in contrast

to the experience of Negro migrants, the white migrants appear to have been handicapped only by inferior education and poor occupational preparation, rather than by any job discrimination based on their rural or southern origin. 5/

The Less Educated

Another major social trend affecting labor supply for lower level occupations has been the steady increase in educational attainment of the U.S. labor force. One available indicator of this long-term trend is the ratio of graduations from high school each year to the number of persons of high school graduation age, typically age 17. Between 1900 and 1960, this proportion increased tenfold, from about 6 per 100 17-year olds in 1900 to 65 per 100 in 1960.

The sharp uptrend in the length of schooling, implied by this comparison, has been attributed to a number of concurrent social and economic influences, including rising standards of living, compulsory school attendance laws, and, particularly, the higher education and training demands of jobs in our increasingly technological society. The growth in the proportion of higher status white-collar jobs, with their characteristically higher educational requirements, has been particularly cited as a stimulus to lengthening of schooling. It is clear, however, that the increase in the proportion of these jobs has not kept pace with the increase in the proportion of better educated workers in the labor force. One estimate, by James Scoville, has indicated that the upgrading of the occupational structure of the labor force between 1940 and 1960--assuming no change in educational demands of specific occupations--would have required an increase of less than one-half year in the average length of schooling of American workers. In contrast, the actual median years of school completed of experienced workers rose by more than 2 years over this period. 6/

In the face of these trends, employers have been in a position to progressively increase formal educational standards for entry into a broadening range of occupations. In turn, the options available to those with lesser education--whether white or black--have been increasingly constrained. This is illustrated by a comparison of the relative occupational concentration of workers with less than 12 years of school in 1940 and 1960 (table 3). The most significant changes were sharp declines in their relative share of jobs in the higher status professional, technical, managerial, and protective service occupation and sharp increases in their relative concentration in all the "lower status" census occupational groups.

Youth

An additional major source of labor supply for low-level occupations throughout this period consisted of children and youth. Farm children and youth have historically been an important component of

Table 3

Relative Occupational Concentration of Workers in the Experienced Civilian Labor Force with Less than 12 Years of School Completed: 1940, 1960 1/

Occupation Group	1940			1960			Net change in concentration indexes 1940-60
	Percent distribution		Concentration index 2/ (<12 yrs.)	Percent distribution		Concentration index 2/ (<12 yrs.)	
	Total	Less than 12 years		Total	Less than 12 years		
WHITE-COLLAR OCCUPATIONS							
Professional and technical	7.2	1.4	32	11.3	1.9	17	-15
Proprietors, managers, and officials	7.8	6.3	81	8.5	5.1	60	-21
Clerical and sales	16.6	9.7	58	22.3	14.3	64	+ 6
BLUE-COLLAR WORKERS							
Craftworkers	11.6	13.4	116	14.3	17.0	119	+ 3
Operatives	18.7	22.1	118	19.9	27.5	138	+20
Laborers, nonfarm	8.0	10.1	126	5.5	8.3	151	+25
SERVICE WORKERS							
Protective service	1.4	1.6	114	1.1	1.1	100	-14
Other service	6.2	6.9	111	7.9	10.5	133	+22
Private household workers	4.8	5.8	121	2.8	4.4	157	+36
FARM OCCUPATIONS							
Farmers and farm managers	10.6	13.7	129	3.9	5.9	151	+22
Farm laborers	6.9	10.1	130	2.4	3.9	163	+33
	100.0	100.0	100	100.0	100.0	100	--

1/ Sources: 1940 data from Alba Edwards, op. cit., p. 181. Excludes public emergency workers. 1960 data from U.S. Census of Population, 1960, Occupational Characteristics, PC(2) 7A, Table 9.

2/ Concentration index is based on ratio of percentage of workers with less than 12 years of education in a given occupational group to corresponding percentage for all workers.

the unpaid labor force on small family farms, particularly during periods of peak seasonal activity. In nonfarm activities, younger workers--depending in part upon their educational preparation--have tended to be concentrated both in the low-paid factory and service jobs and in the least skilled clerical and sales occupations. With the steady lengthening of the period of schooling, there have been progressive declines in the proportion of younger persons available for regular full-time employment. An increasing proportion of youth of high school or college age have, however, become part of the part-time labor force, whose employment opportunities have mainly been concentrated in trade, service, and other nonmanufacturing industries.

The extent to which younger workers differentially contributed to the supply of manpower for certain occupations in more recent decades is indicated by summary data for 1940 and 1960. In both of these years, workers aged 16 to 24 years accounted for a particularly large proportion of the farm laborer work force and were also disproportionately concentrated in such occupations as nonfarm laborers and clerical and sales occupations. Younger male workers also held a relatively large share of the operative and service jobs. Conversely, youth accounted for a relatively small proportion of the labor force in the managerial, professional, and craft occupations.

Between 1940 and 1960, younger workers increased their relative share of most of the white-collar occupational groups, particularly in clerical and sales jobs, probably reflecting the sharp overall expansion of white-collar employment, as well as the higher educational attainment of younger workers in the 1960 labor force, compared with their 1940 counterparts. At the same time, younger male workers also increased their relative share of the nonfarm laborer and the service occupations. Younger women continued to be overrepresented in such low-level occupations as nonfarm laborers and private household work, including babysitters, compared with women 25 years and over. The differential concentration of youth and young adults in the lower status blue-collar or service occupations, as well as in the less skilled white-collar jobs, was much less pronounced among women than among men workers. This probably reflects the much more limited upward mobility of women workers over their working life span and their more intermittent employment patterns.

SUMMARY

In this chapter we have surveyed the changing patterns of demand and sources of manpower for lower status jobs as our economy was transformed over a period of more than a century from its agrarian beginnings into a highly urbanized industrial--or postindustrial--society. Throughout this era, we found one constant in terms of low-level manpower

sources--the black worker. Imported first as slaves to perform the backbreaking toil of the southern plantation economy, black men and women--for a full century after emancipation--had remained largely concentrated in the most menial, least skilled, and lowest paid occupations, even during periods of rapid industrial growth and of equally rapid shifts in occupational structure. The nature of their occupational duties had, of course, changed over the years, as growing numbers moved from southern farms to northern cities; yet, between 1910 and 1960, their relative occupational status, compared with white workers, had shown no net improvement.

Black workers alone, however, were not sufficient in numbers to fill our total low-level manpower needs. An additional and major source of labor supply for these jobs was provided by the mass inflow of white immigrants, particularly during the period of rapid industrialization between the mid-1800's and the outbreak of World War I. Each generation of these immigrants in turn produced its share of laborers, semiskilled factory workers, and low-level service workers--with disproportionate contributions from the most disadvantaged of these new ethnic strains, i.e., the Irish, then the South and East Europeans and, most recently, the Latin Americans. With the termination of mass immigration after World War I, their place was taken by the increased inflow of native whites as well as black migrants from rural farm areas, which peaked during the World War II period and the decade of the 1950's. Handicapped by inferior education and by lack of industrial skills--as well as by racial discrimination in the case of blacks or other minority groups--these migrants from farm to city were differentially concentrated in the lower skilled manual and service occupations in urban areas.

The initial educational and training handicaps of these immigrant and internal migrant groups were shared by significant numbers of indigenous white workers as well--whether due to lack of opportunities or limited aptitudes. With the growing general educational level of the labor force, our analysis suggests that those youth with the least education have been further handicapped by lack of work experience and of those practical skills typically acquired on the job rather than through formal education. Therefore--in addition to the other manpower sources identified above--each generation of young workers has probably performed a disproportionate share of low-level work, as part of its rites of initiation into the labor force.

Thus, our historical review has identified a number of key socio-demographic characteristics which, in combination, have distinguished workers in lower level occupations from those in higher status jobs, i.e., race, nativity, rural origins, educational level, and age. The composition of the low-level labor force has, in turn, varied from period to period as a result of the changing proportions of workers with these characteristics in the labor force and of concurrent changes in the occupational distribution of labor demand.

Historical analyses of occupational supply trends and of their impacts have been handicapped, however, by inherent limitations of data sources--notably, the lack of reasonably comparable statistics on the composition of the labor force by occupation over a period of decades. Moreover, with limited exceptions, the published census statistics do not permit a systematic cross-classification of these relevant characteristics so that, for example, the separate influence upon occupational composition of such factors as educational attainment can be measured, as against factors such as race, age, or sex. This capability has emerged for the first time as a result of the production and dissemination by the Bureau of the Census of public use sample tapes for the 1960 and 1970 Censuses of Population and has served as the basis for the more intensive analysis of recent occupational supply trends in the following chapter.

IV. TRENDS IN OCCUPATIONAL LABOR SUPPLY, 1960-70

LABOR MARKET DEVELOPMENTS

The decade of the 1960's witnessed significant shifts in the composition of the work force engaged in many lower level occupations. These resulted, in large part, from certain broader labor market developments affecting demand and supply for workers.

On the demand side, a notable feature of the decade was the sustained expansion of employment between 1963 and 1970 and the achievement of low overall unemployment rates during the second half of the decade, stimulated in large part by the Vietnam war and accompanying expansionist fiscal policies. As in preceding decades, employment growth was most rapid in the white-collar occupations and the service sector of the economy, including government. The net effect was a significant occupational "upgrading" of the labor force, as illustrated by the following percentage changes in the experienced civilian labor force between 1960 and 1970, by major occupational status group.

	Percentage increase, 1960-70
Group I	44
Group II	25
Group III	8
Group IV	9
Group V	2

Among the higher status occupations, growth was most rapid in the professional and technical occupations and in the clerical and administrative work force. Among the lower level occupations, those associated with the expanding service industries--such as hospital attendants and food service workers--experienced rapid growth, in contrast with sharp reductions in the number of domestics, farm laborers, and other laborers in many nonagricultural industries.

From a labor supply standpoint, the most significant development was the entry into the labor force of the exceptionally large generation of youth born during the post-World War II baby boom. Concurrently, the favorable employment climate contributed to a relatively sharp increase in the labor force participation of married women.

Another social trend of major significance for our analysis was the emergence of a national commitment toward the goal of equal employment opportunity for blacks and other minority workers--a commitment reflected not only in Federal legislation and "affirmative action programs" but in the significant progress in occupational upgrading of these workers during the decade.

The implications of these and related developments for the occupational distribution of the work force are analyzed in this chapter from two perspectives. The first approach consists of an examination of changes in the occupational distribution of specific groups of workers, based on such characteristics as educational level, race, sex, and age. The second approach examines the changes in the distribution of workers within given occupations, or occupational groups, in terms of these characteristics.

The primary data source for these analyses consisted of the labor force data from the 1960 and 1970 Censuses of Population public use tapes, which were tabulated in accordance with the occupational status groups described in table 1. The census data for 1970, used for this analysis, were also adjusted to allow for the effects of changes in census occupational classification and enumeration procedures, introduced in the 1970 census. For this purpose, 1960-70 trends for major census occupational groups or subgroups, as reported in the Current Population Survey, were used as benchmarks. The latter survey--unlike the decennial census--had not significantly modified its occupational classification and enumeration procedures between these two dates; hence, it was considered a more reliable measure of major occupational trends over the decade.

CHANGES IN OCCUPATIONAL DISTRIBUTION BY SOCIODEMOGRAPHIC GROUP

Trends by Education Level-- An initial set of comparisons of occupational distributions was made for workers classified by each of four educational attainment groups: Less than 9 years of schooling, 9 to 11 years, 12 years, and 13 years or more (table 4). These comparisons reveal a striking contrast. Despite the rapid overall growth of the labor force in the higher status occupations, we find a general pattern of occupational downgrading between 1960 and 1970 among men and women with any specified level of education, with the notable exception of nonwhite workers (discussed below). For example, among high school dropouts of both sexes (those with 9 to 11 years of school completed), the proportion of workers in groups I and II combined declined from 28.7 to 25.5 percent, while their proportion in groups IV and V rose from 45.1 to 48.5 percent. This pattern is evident in each educational attainment group for both men and women and is mirrored, in more pronounced form, in the separate statistics for white workers of each sex.

The explanation lies, of course, in the sharp increase in educational attainment of workers during the course of the decade. Between 1960 and 1970, the percentage of workers in the experienced civilian labor force with 12 years of education rose from 51 to 65 percent, and the percentage with one or more years of college (i.e., 13 or more years schooling) rose from 22 to 28 percent. As had been true in preceding decades, this rapid educational upgrading of the labor force exceeded

Table 4.0

Percent Distribution of the Experienced Civilian Labor Force, by Occupational Status Group, Educational Level, Race, and Sex: 1960 and 1970

Total, 16 Years and Over

Occupational Group	Total		Years of school completed							
			Less than 9		9-11		12		13 and over	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
TOTAL, ALL RACES										
Number (000)	64372	75114	18219	12195	13541	14479	18752	27275	13860	21165
Percent Distribution										
Group 1	11.5	14.2	1.2	1.4	2.6	2.5	6.3	6.6	40.7	39.3
Group 2	30.8	32.8	13.0	11.8	26.1	23.0	44.8	41.9	39.7	40.2
Group 3	22.6	20.9	28.8	27.1	26.2	26.0	22.8	23.5	10.7	10.5
Group 4	22.5	21.0	32.2	34.6	30.7	32.2	19.0	20.2	6.3	6.4
Group 5	12.6	11.1	24.8	25.1	14.4	16.3	7.1	7.8	2.6	3.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
WHITE TOTAL										
Number (000)	57654	67117	14953	9979	12082	12486	17503	24869	13116	19783
Percent Distribution										
Group 1	12.2	14.8	1.3	1.4	2.7	2.6	6.5	6.8	40.9	39.3
Group 2	33.2	34.6	15.2	13.2	28.4	25.0	46.6	43.3	40.2	40.6
Group 3	23.5	21.5	31.9	29.7	27.4	27.4	23.2	23.9	10.8	10.5
Group 4	22.1	20.2	33.6	36.0	31.0	31.8	18.3	19.2	6.0	6.2
Group 5	9.0	8.9	18.0	19.7	10.5	13.2	5.4	6.8	2.1	3.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
NONWHITE TOTAL										
Number (000)	6718	7997	3266	2214	1459	1993	1249	2408	744	1382
Percent Distribution										
Group 1	5.6	9.1	.7	1.2	1.5	2.1	3.8	4.9	37.8	39.1
Group 2	10.1	18.2	3.2	5.4	6.9	10.2	20.1	27.5	29.8	34.3
Group 3	14.7	15.8	14.9	15.1	15.7	17.4	16.1	18.4	9.5	10.3
Group 4	25.3	27.5	25.4	29.0	29.3	34.5	28.0	30.3	12.4	10.1
Group 5	44.3	29.4	55.8	49.3	46.6	35.8	32.0	18.9	10.5	6.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.1

Percent Distribution of the Experienced Civilian Labor Force, by Occupational Status Group, Educational Level, Race, and Sex: 1960 and 1970

Male Workers, 16 Years and Over

Occupational Group	Total		Years of school completed							
			Less than 9		9-11		12		13 and over	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
TOTAL, ALL RACES										
Number (000)	43406	47010	13509	8556	9217	9241	11326	15451	9354	13752
Percent Distribution										
Group 1	10.5	13.3	1.0	1.2	2.4	2.2	6.2	6.2	37.3	36.5
Group 2	25.1	25.7	11.8	10.2	21.0	17.4	32.5	28.1	39.3	38.4
Group 3	29.2	27.9	34.4	33.1	33.1	33.5	32.3	34.0	14.0	13.6
Group 4	22.8	21.5	30.7	32.7	29.7	31.0	21.3	22.4	6.5	7.0
Group 5	12.4	11.6	22.1	22.8	13.8	15.9	7.7	9.3	2.9	4.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
WHITE TOTAL										
Number (000)	39323	42514	11352	7113	8350	8140	10661	14226	8960	13035
Percent Distribution										
Group 1	11.1	14.0	1.1	1.3	2.5	2.3	6.5	6.4	37.5	36.6
Group 2	26.8	27.0	13.4	11.1	22.4	18.6	33.4	29.0	39.9	38.9
Group 3	30.2	28.5	37.2	35.8	34.5	34.9	32.9	34.7	14.0	13.6
Group 4	22.2	20.5	31.0	32.9	29.4	30.1	20.7	21.5	6.2	6.6
Group 5	9.7	10.0	17.3	18.9	11.2	14.1	6.5	8.4	2.4	4.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
NONWHITE TOTAL										
Number (000)	4083	4496	2157	1453	867	1101	665	1225	394	717
Percent Distribution										
Group 1	4.2	7.4	.7	.9	1.5	1.3	2.4	3.5	32.8	36.5
Group 2	8.5	13.5	3.3	5.9	6.6	8.0	16.5	18.1	27.4	29.4
Group 3	19.2	21.3	19.0	19.5	20.2	24.3	22.0	25.6	13.2	13.2
Group 4	29.1	30.5	29.4	31.8	33.0	37.2	31.7	33.3	14.2	13.4
Group 5	39.0	27.3	47.6	41.9	38.7	29.2	27.4	19.5	12.4	7.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.2

Percent Distribution of the Experienced Civilian Labor Force, by Occupational Status Group, Educational Level, Race, and Sex: 1960 and 1970

Female Workers, 16 Years and Over

Occupational Group	Total		Years of school completed							
			Less than 9		9-11		12		13 and over	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
TOTAL ALL RACES										
Number (000)	20966	28104	4710	3627	4324	5238	7426	11826	4506	7413
Percent Distribution										
Group 1	13.6	15.5	1.6	1.7	3.1	3.1	6.5	7.1	48.0	44.3
Group 2	42.5	44.9	16.7	15.5	37.0	32.9	63.8	59.9	40.2	43.7
Group 3	9.0	9.3	13.0	12.9	11.2	12.7	8.2	9.7	3.9	4.7
Group 4	21.7	20.2	36.2	39.3	33.0	34.3	15.3	17.3	5.9	5.4
Group 5	13.2	10.1	32.5	30.6	15.7	17.0	6.2	6.0	2.0	1.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
WHITE TOTAL										
Number (000)	18331	24603	3601	2866	3732	4346	6842	10643	4156	6748
Percent Distribution										
Group 1	14.5	16.1	1.8	1.7	3.4	3.1	6.6	7.2	48.3	44.5
Group 2	46.9	47.8	20.9	18.5	41.7	37.1	67.1	62.5	40.9	44.1
Group 3	9.1	9.4	14.8	14.5	11.5	13.4	8.1	9.5	3.8	4.5
Group 4	22.0	19.7	42.1	43.5	34.4	35.0	14.6	16.2	5.5	5.3
Group 5	7.5	7.0	20.4	21.8	9.0	11.4	3.6	4.6	1.5	1.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
NONWHITE TOTAL										
Number (000)	2635	3501	1109	761	592	892	584	1183	350	665
Percent Distribution										
Group 1	7.6	11.3	.8	1.7	1.5	3.0	5.3	6.4	43.4	42.1
Group 2	12.6	24.4	3.0	4.3	7.3	12.9	24.1	37.3	32.6	39.5
Group 3	7.8	8.7	6.9	6.7	9.1	8.9	9.4	10.9	5.4	7.1
Group 4	19.4	23.4	17.5	23.5	24.0	31.1	23.8	27.2	10.3	6.5
Group 5	52.6	32.2	71.8	63.8	58.1	44.1	37.4	18.2	8.3	4.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

the rate of growth of the higher status, white-collar occupations, in which most workers with these levels of education had been concentrated in earlier decades. As a result, an increasing percentage of workers with a high school diploma, or even with some college education, found employment in blue-collar or service occupations.

Trends by Race--The decade of the 1960's was marked by a signficant "take-off" in terms of occupational upgrading of black workers, as illustrated by the shift in occupational status distribution of nonwhites compared with that of white workers. The proportion of nonwhite workers in group V declined from 44.3 percent in 1960 to 29.4 percent in 1970--a reduction of fully one-third. The sharpest relative gains for nonwhites were recorded in the group I and II (white-collar) occupations, where their proportion rose from 15.7 percent in 1960 to 27.3 percent in 1970, with much smaller gains in groups III and IV. The advance of nonwhites into the white-collar occupations was most pronounced for those with 12 or more years of schooling; among nonwhites with lesser schooling, the greatest net movement was from group V jobs to the semiskilled, group IV category of occupations.

Despite these gains, the percentages of nonwhites in group V occupations still exceeded the corresponding percentages of white workers in each sex and educational attainment groups by ratios ranging from about 4 1/2:1, in the case of women with 12 years of schooling, to less than 2:1, for men with 13 or more years of education.

Trends by Sex--A comparison of the statistics on occupational status distribution for men and women of each race reveals some expected differences in their distribution among the 5 broad occupational groups. Women--and particularly nonwhite women--have tended to be differentially concentrated at both extremes of the occupational spectrum. A larger proportion of women workers than men workers with 12 or more years of schooling are found in the group I and II occupations, while a larger proportion of women workers with less than a high school education are found in the group V occupations (typically in personal service activities). On the other hand, a larger proportion of men, at all educational levels, are found in the intermediate group III and group IV occupations.

The pattern of shifts in occupational status distribution over the decade was, however, generally similar for men and women in each race. Among the nonwhites, the better educated women workers--those with at least 12 years of schooling--were among the most prominent beneficiaries of the improved job climate of the 1960's. In 1960, 37.4 percent of nonwhite women with 12 years of schooling--nearly 2 out of 5--had still been attached to the lowest status jobs, working as domestics, cooks, kitchen or cleaning service workers in laundries, or in various laborer jobs. The proportion of nonwhite women in such jobs was more than

10 times as great as among white women with similar levels of education. By 1970, the proportion of nonwhite women high school graduates in group V occupations had declined by more than one-half, to 18.2 percent, while the corresponding percentage for white women high school graduates had edged up from 3.6 percent in 1960 to 4.6 percent in 1970.

Age Group Comparisons--Thus far, we have examined shifts in occupational status distributions of workers for all age groups combined. It would be reasonable to expect that the rate of change in occupational distributions in response to a changing labor market environment would be most pronounced for younger workers. The data generally confirm this assumption. The data for white workers, by educational level, thus indicate significantly greater increases in the proportions of younger workers, aged 16 to 24, in group V occupations than among adult workers with similar educational attainment. For example, whereas the percentage of white youth with 9 to 11 years of school completed, who were in group V occupations, rose from 20.1 to 26.8 percent between 1960 and 1970, the increase for the corresponding group of adult white workers, 25 years and over, was only from 8.4 to 10.0 percent.

Similarly, the decline in concentration of nonwhite workers in group V occupations was most pronounced among those aged 16 to 24 years. Thus, among those with 9 to 11 years of school completed, the proportion of nonwhite youth in group V occupations fell from 54.6 to 38.0 percent over the decade, or by 16.6 percentage points, as compared with a reduction from 44.2 to 35.3 percent, or 8.9 percentage points for the corresponding group of nonwhite adults, 25 years and older.

OCCUPATIONAL STATUS INDICES

The occupational status index, for a particular category of workers, is a weighted average of the occupational standing of that group, derived by multiplying the rank or percentile of each occupation, as shown in table 1, by the number of workers in that group who are attached to that occupation. These indexes thus provide a useful summary measure in comparing the overall occupational standings of different population groups of workers and the changes in these standings over time.

Historical comparisons of changes in status scores for white and nonwhite workers between 1910 and 1960 indicate that, over this span of a half century, nonwhites had made limited progress in improving their overall occupational status and had made no net progress at all, relative to white workers. Although the status index of nonwhite workers rose from 19.0 in 1910 to 25.2 in 1960, the ratio of their index to that of white workers was still .527 in 1960, or approximately the same as in 1910 (table 5). The mass movement of black workers from farm to city and from the South to the north had resulted, in large part, in their shift from low-status jobs on the farm to similarly low-status jobs in the city.

Table 5

Occupational Status Indices for White and Nonwhite Workers: 1910, 1950, 1960, and 1970

Year	Status index [1]		Ratio of nonwhite to white index
	White	Nonwhite	
1950 Comparable Occupations [2]			
1910	36.2	19.0	52.5
1950	44.6	22.1	49.6
1960	47.8	25.2	52.7
1960/70 Comparable Occupations [3]			
1960	49.0	25.1	51.2
1970	51.3	34.0	66.3

1/ Except as otherwise noted, the status indexes for each group were derived as the average of the percentile status scores for each occupation, as shown in the first column of table 1, weighted by the number of workers in each occupation.

2/ Based on occupational distributions of white and nonwhite workers among 42 occupational subgroups, comparable to 1950 census occupational classifications. Occupational status percentile scores, based on the more detailed 1960/70 occupational clusters, were reweighted, where necessary, to correspond to the coverage of the 1950 occupational groups. For this historial series, Otis Duncan's 1950 socioeconomic status scores were used for farmers and farm managers, unpaid family workers and paid farm workers.

3/ Based on occupational distributions of white and nonwhite workers in the experienced civilian labor force, 16 years and over, classified in accordance with the 57 "1960-70 comparable" occupations used in the current study.

Between 1960 and 1970, however, the nonwhite index increased by more than one-third to 34.0, compared with an increase of only 2.3 points, to 51.3, for white workers. As a result, the relative occupational standing of the nonwhite labor force in 1970 was 66.3 percent, or nearly two-thirds that of white workers. These changes, as noted above, resulted particularly from the pronounced increase in the proportions of nonwhite workers in white-collar and in middle-level blue-collar occupations, with a concurrent reduction in their proportions in low-status (group V) occupations.

The net effect of these changes in occupational distribution upon the relative occupational position of nonwhite vs. white workers in specific age, and educational achievement groups is indicated in table 6. In addition to showing the net changes in the ratios of the respective nonwhite/white occupational status indices between 1960 and 1970 for each of these groups, we have expressed these changes as percentages of the "status gap" for each group as of 1960. Thus the 1960 occupational status index for all nonwhite workers, 16 years and over, of 25.1 compared with that for white workers, of 49.0 had resulted in a ratio of .512. The 1960 "status gap," defined as the complement of this ratio, was therefore .488. In 1970, the ratio of the nonwhite to white occupational status indices was .663, an increase of .151 points. This in turn corresponded to a reduction of 31 percent in the nonwhite/white status gap of .488 over the decade.

Based on this criterion, an inspection of table 6 indicates that progress of nonwhites in bridging their occupational status gap relative to white workers was positively and strongly associated with educational level. The greatest percentage reductions in the nonwhite/white occupational status differential were achieved by college educated nonwhites, those with 13 years or more of school completed. For the total nonwhite experienced civilian labor force, the status gap for college-educated workers was reduced by 50 percent over the decade, compared with reductions of 36 percent for those with 12 years of education, 29 percent for those with 9 to 11 years of schooling, and only 20 percent for those with less than 9 years of school completed.

Younger nonwhite workers, aged 16 to 24 years, achieved much more rapid relative progress in status advancement than did adult nonwhites, 25 years and over. Over the decade, their occupational status gap, compared with white workers aged 16 to 24 years, was reduced by 51 percent, whereas the corresponding reduction for all nonwhite age groups was 31 percent. The disparity in occupational progress by educational level was particularly wide for these younger nonwhite workers. In the case of college-educated nonwhites, the occupational status gap with white youth had been virtually closed by 1970. In contrast, the gap had actually been widened between 1960 and 1970, in the case of that small proportion of nonwhite youth who had not progressed beyond the eighth grade. (The latter figures, indicating an increase in the status gap of 19 percent over the decade, are, however, subject to particularly large sampling variability.)

Table 6

Occupational Status Index Ratios of Nonwhite Workers, Relative to White Workers, by Sex, Age Group, and Educational Attainment: 1960 and 1970

	Total	Years of school completed			
		9	9-11	12	13 & Over
TOTAL, 16 YEARS AND OVER					
1960	.512	.520	.496	.591	.851
1970	.663	.616	.641	.738	.921
Net change	.151	.096	.145	.147	.074
Percent reduction in status gap	31%	20%	29%	36%	50%
MALES, TOTAL					
1960	.550	.588	.576	.643	.811
1970	.671	.671	.705	.749	.909
Net change	.121	.083	.129	.106	.098
Percent reduction in status gap	27%	20%	30%	30%	52%
FEMALES, TOTAL					
1960	.543	.390	.382	.526	.879
1970	.631	.485	.523	.707	.921
Net change	.178	.095	.141	.181	.042
Percent reduction in status gap	33%	16%	23%	38%	35%
AGES 16-24					
1960	.569	.732	.579	.654	.808
1970	.790	.682	.799	.850	.974
Net change	.221	-.050	.220	.196	.166
Percent reduction in status gap	51%	-19%	52%	57%	87%
MALES, 16-24					
1960	.550	.703	.622	.589	.779
1970	.808	.662	.861	.919	1.016
Net change	.258	-.041	.239	.330	.237
Percent reduction in status gap	57%	-14%	63%	80%	107%
FEMALES, 16-24					
1960	.599	.837	.499	.705	.810
1970	.763	.693	.693	.799	.908
Net change	.164	-.146	.194	.094	.098
Percent reduction in status gap	41%	-90%	38%	32%	52%

Among the younger nonwhites, male workers achieved greater gains in occupational upgrading, relative to whites, than did female workers. Nonwhite men aged 16 to 24 years reduced their status gap, compared with white male youth, by 57 percent over the decade, with particularly sharp gains for those with 13 or more years of school (107 percent) and with 12 years of school (80 percent). Nonwhite women in most age/education specific categories tended to lag in their relative rate of progress compared with nonwhite men with similar educational attainment.

From the above summary, it is apparent that the better educated and younger nonwhite workers consistently achieved the greatest improvement in relative occupational standing over the decade. We have estimated that approximately one-half of the overall improvement in the nonwhite occupational status index between 1960 and 1970 (in absolute terms) was associated with the increase in the educational level of the nonwhite labor force and that the balance was a result of all those factors that contributed to occupational upgrading of nonwhite workers within the same educational attainment groups.

OCCUPATIONAL COMPOSITION

In the preceding sections, we have examined the changes in distribution of major sociodemographic components of the labor force among occupations over the past decade. We shall now turn to an inspection of these trends in the composition of the labor force within specific occupations or occupational status groups, based on such characteristics as sex, race, age, and educational attainment. Collateral data on trends in part-time employment and in participation of foreign-born workers in various occupations will also be examined.

Status Group Summaries--An initial overview of these shifts in occupational composition is provided in table 7, which shows the 1960 and 1970 distributions of the labor force within each occupational status group by broad age group and race. The decade of the 1960's had been marked, as noted earlier in the chapter, by a large-scale inflow of youth and younger adults into the civilian labor force. Younger workers, in past decades, have tended to be disproportionately concentrated in the least skilled, entry-type occupations, and particularly in those jobs that have been most amenable to utilization of a part-time casual labor force, such as laborers, personal service occupations, and retail sales. The summary statistics indicate that this trend was accentuated for white youth in the decade of the 1960's. Thus, although the total labor force in group V occupations grew by only 160,000, or 1.9 percent, over the decade, this was the net result of a large inflow of young white workers offsetting sharp reductions in the number of nonwhites in this occupational class. As a result, the proportion of young white workers in group V occupations rose from

Table 7

Distribution of Experienced Civilian Labor Force in Each Occupation Status Group, by Broad Age Group and Race, 1960-70 1/

Total, Both Sexes

Occupational Group	Total	Ages 16 to 24			Age 25 and over		
		Total	White	Nonwhite	Total	White	Nonwhite
	Number (000)						
TOTAL							
1960	64366	9655	8625	1030	54711	49046	5665
1970	75113	14722	13145	1577	60391	54006	6385
Net change	10747	5067	4520	547	5680	4960	720
GROUP I							
1960	7398	777	747	30	6621	6281	340
1970	10641	1575	1479	96	9066	8438	628
Net change	3243	798	732	66	2445	2157	288
GROUP II							
1960	19810	3229	3110	119	16581	16026	555
1970	24711	5115	4670	445	19596	18583	1013
Net change	4901	1886	1560	326	3015	2557	458
GROUP III							
1960	14545	1469	1353	116	13076	12232	844
1970	15686	2274	2070	204	13412	12345	1067
Net change	1141	805	717	88	336	113	223
GROUP IV							
1960	14454	2587	2298	289	11867	10450	1417
1970	15755	3466	2978	488	12289	10572	1717
Net change	1301	879	680	199	422	122	300
GROUP V							
1960	8159	1615	1142	473	6544	4031	2513
1970	8320	2363	1972	391	5957	3994	1963
Net change	161	748	830	-82	-587	-37	-550
	Percent Distribution						
TOTAL							
1960	100.0	15.0	13.4	1.6	85.0	76.2	8.8
1970	100.0	19.6	17.5	2.1	80.4	71.9	8.5
GROUP I							
1960	100.0	10.5	10.1	0.4	89.5	84.9	4.6
1970	100.0	14.8	13.9	0.9	85.2	79.3	5.9
GROUP II							
1960	100.0	16.3	15.7	0.6	83.7	80.9	2.8
1970	100.0	20.7	18.9	1.8	79.3	75.2	4.1
GROUP III							
1960	100.0	10.1	9.3	0.8	89.9	84.1	5.8
1970	100.0	14.5	13.2	1.3	85.5	78.7	6.8
GROUP IV							
1960	100.0	17.9	15.9	2.0	82.1	72.3	9.8
1970	100.0	22.0	18.9	3.1	78.0	67.1	10.9
GROUP V							
1960	100.0	19.8	14.0	5.8	80.2	49.4	30.8
1970	100.0	28.4	23.7	4.7	71.6	48.0	23.6

Note: All control totals are net of not reported and allocated items.

1/ Detail may not add to totals because of rounding.

14 percent in 1960 to nearly 24 percent in 1970, with corresponding reductions among nonwhites (youth and adults), as well as among white adult workers 25 years and over.

Trends in Educational Level Composition--Thus far, our summary of changes in characteristics of workers, by occupation, has not taken into account the effects of the sharp educational upgrading of the labor force. Between 1960 and 1970, the percentage of workers in the experienced civilian labor force who were high school graduates had increased from 50.7 to 64.5 percent. As a result, the average educational achievement of workers increased in virtually all occupations, continuing the long-term trend. Relative gains in the percentage of high school graduates were most pronounced in the middle and lower level occupational status groups. Thus, the proportion of high school graduates in group III occupations rose from about 40 percent in 1960 to 55 percent in 1970, or by more than one-third; among group IV occupations, the increase was from 31 percent in 1960 to 44 percent, or by about two-fifths, and in group V occupations, the corresponding percentage rose from 21 to 35 percent, or by approximately two-thirds. Increases in the proportion of high school graduates in the latter group were most pronounced in occupations that experienced a relatively large inflow of younger white workers, such as kitchen workers and nonmanufacturing laborers. Conversely, declining occupations such as domestic workers and laundry workers received the smallest increases in high school graduates.

Net Shifts in Composition of Group V Labor Force--A composite analysis of net labor force gains and losses, by sex, race, educational level, and broad age group is presented in table 8, for the group V category, as a whole. From this summary, several major conclusions concerning the changing sources of manpower for these low-status occupations can be drawn.

1. There was a large scale net exodus of nonwhite workers, primarily adults, from low status occupations. Between 1960 and 1970, the number of nonwhites in these occupations declined by 630,000, or 21 percent. Of this net loss, 550,000 consisted of workers 25 years and over; 80,000 of workers, 16 to 24 years. About three-fifths of this net loss of 630,000 nonwhites was among men, mainly reflecting reductions in nonfarm laborers, and two-fifths among women, mainly from domestic service and farm labor.

2. A second source of loss consisted of white adult male workers, 25 years and over, whose participation in group V occupations declined by 280,000 or 10 percent over the decade, reflecting mainly declines in various laborer occupations, both farm and nonfarm. Thus, the combined losses of nonwhites and of adult white males from group V occupations amounted to more than 900,000.

Table 8

Net Changes in Group V Labor Force, 1960-70,
by Sex, Race, Age Group, and Educational Level

(000)

Age and years of school completed	Total, Both Sexes			Male			Female		
	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
TOTAL, AGES AND OVER	160	790	-630	70	460	-370	80	340	-260
Less than 12 years	-1040	-350	-690	-840	-400	-430	-210	50	-260
12 years and over	1200	1140	60	910	860	60	290	290	—
AGES 16-24	740	830	-80	670	720	-50	60	100	-40
Less than 12 years	30	130	-100	30	100	-70	-10	20	-30
12 years and over	710	700	20	640	610	20	70	80	-10
AGES 25 AND OVER	-580	-40	-550	-600	-280	-320	30	250	-220
Less than 12 years	-1070	-470	-590	-870	-500	-360	-200	30	-230
12 years and over	490	440	50	270	230	40	220	210	10

Note: Detail may not add to group totals because of rounding.

3. These losses were more than offset by gains from two sources: A large inflow of young white workers (mainly males) and an increase in the number of adult white women. Between 1960 and 1970, the number of white male youths aged 16 to 24 years in group V occupations increased by 720,000 or 73 percent, while the number of young white women rose by 100,000, or about 50 percent, over the decade. In addition, there was a net increase of adult white women, 25 years and over in group V occupations of 250,000 or 21 percent.

4. These shifts in labor force composition were accompanied by a particularly sharp increase in the proportion of high school graduates in the group V labor force. Reflecting the general trend towards lengthening of schooling, the white entrants into the labor force (both youth and female adults) consisted predominantly of high school graduates, while the group experiencing reductions consisted mainly of persons with less than 12 years of schooling. Thus, there was a net gain of 1,200,000 high school graduates in group V occupations and a net loss of 1,040,000 nongraduates. As a result, the percentage of high school graduates among group V workers rose from 21 to 35 percent between 1960 and 1970.

The Growth of Part-Time Employment--Our analyses of the net changes in labor force composition, by occupation, between 1960 and 1970, have defined "labor supply" thus far in terms of numbers of workers rather than in terms of the labor force time, or hours of work, provided by different elements of the working population. However, the large-scale shift in composition of the group V labor force from nonwhite (mainly adult) workers to white youth and adult white women also reflected a significant shift, in many of these occupations, from reliance upon full-time "career" members of the labor force, to increased utilization of secondary workers who--in many cases--were only available for part-time or intermittent employment.

Based on our tabulations of decennial census data for 1960 and 1970, the sharpest gains in the proportion of part-time workers, among the group V occupations, occurred among nonfarm laborers, cooks, and kitchen workers, cleaners and other building service workers, and laundry and dry cleaning operatives. The largest component of the part-time labor force in most of these occupations consisted of 16 to 24 year olds. By 1970, nearly 22 percent of all nonfarm laborers (exclusive of those in durable goods manufacturing industries) consisted of 16 to 24 year olds who worked at these jobs for less than 35 hours during the census week--more than twice the corresponding proportion in 1960. The proportion of young part-time workers more than doubled, too, among cooks and kitchen workers, from 7.1 to 16.1 percent, and registered substantial increases in the cleaning and building service occupations as well. Adult women, 25 years and over, also increased their proportion of part-time workers among cleaners and building service workers, as well as among laundry operatives and domestics. In the latter occupation,

fully one-half of those employed in 1970, exclusive of housekeepers and babysitters, had worked less than 35 hours in the census week.

The Role of Immigration

Immigration, which had been a negligible factor in labor force growth since the 1920's, increased moderately in the decade of the 1960's. Net civilian immigration, as estimated by the Bureau of the Census, rose from 3.0 million in the 1950's to 3.9 million in the 1960's. This corresponded to a rate of 2.2 per 1,000--the highest rate for any decade since termination of mass immigration in the 1920's.

The composition of the immigrant population entering in the 1960's, although similar to that of immediately preceding decades, contrasted sharply with that of the earlier era of mass immigration into the United States, prior to enactment of the restrictive laws of the early 1920's. The "national origins" quota system, imposed on immigration from the Eastern Hemisphere--combined with the effects of the postwar prosperity in Western Europe--had sharply curtailed the proportion of immigrants from Europe from an average of 80 percent of the total in the period 1901-30 to 53 percent in the 1950's and to 34 percent in the decade 1961-70. Immigration from Mexico, the West Indies, and other Latin American countries had increased rapidly and accounted for 39 percent of all alien immigrant entries in the decade of the 1960's, as against only 22 percent in the 1950's and 6 percent in the 1901-30 period. (The 1965 amendments to the immigration law established an overall Western Hemisphere quota, for the first time; however, this quota did not become fully effective until 1968 and had a limited effect on the proportion of immigrants entering from Latin American countries during the decade as a whole.)

Occupational preference systems, operating within the framework of quota limitations, which were reinforced by the 1965 amendments, had moreover contributed to a sharp upgrading in occupational and educational levels of the new immigrants--particularly in facilitating an increased inflow of highly educated professional and technical workers. Thus, in sharp contrast to earlier periods such as 1901-10, when professional and technical workers constituted less than 2 percent of the total immigrant inflow, the proportion of professional and technical workers among immigrants with a reported occupation was 15.5 percent in 1961-60 and 23.0 percent in 1961-70. The latter percentage was twice as great as the percentage of professional and technical workers in the experienced civilian labor force in 1960. At the same time, the growing number of immigrants from Mexico and other neighboring West Indies and Latin American countries (other than Cuba) continued to include a large proportion of workers with limited skills and educational backgrounds, as reflected in a higher-than-proportionate frequency, among the immigrant group, of such occupations as private household workers and laborers.

The above statistics refer to the occupation reported by immigrants at the time of entry and do not necessarily reflect the jobs occupied by such immigrants in the United States. To assess the impact of recent immigration upon the labor force in various occupations, tabulations were made of the distribution of foreign-born workers in 1960 and 1970 by occupation and region of origin based on the decennial census sample public use tapes.

An examination of the statistics for the foreign-born labor force, as a whole, reveals a much more favorable distribution relative to the overall occupational distribution of the labor force than indicated by our comparisons for earlier periods. In 1970, foreign-born professional workers accounted for a larger-than-proportionate share of the labor force of medical and allied occupations and engineers and for about the same proportion in "all other" professional and technical occupations, as their overall percentage of the labor force. At the same time, foreign-born workers also continued to account for a larger-than-proportionate share of the labor supply in various lower status occupational groups, including operatives in low-wage manufacturing industries, farm laborers, and service workers, other than private household.

The separate data for workers born in Latin American countries reveal a more consistent pattern of differential concentration in low status occupations. Between 1960 and 1970, the number of workers in the experienced civilian labor force, excluding those with no specific occupation reported, who were born in Latin American countries rose from about 400,000 to 900,000. Of the latter total, over 200,000, or 22 percent, were in the group V occupations, although these occupations, in 1970, accounted for only 11 percent of the total experienced civilian labor force. A similar concentration of Latin American-born workers was evident in the group IV class of occupations. As a result, whereas Latin American workers represented only 1.2 percent of all experienced civilian workers in 1970, they accounted for 2.5 percent or more of the labor force in the following occupations: Hired farm laborers (7.6 percent), laundry and dry cleaning operatives (2.9 percent), operatives in nondurable goods manufacturing (2.8 percent), cleaners, charwomen and allied occupations (2.7 percent), and other private household workers (2.5 percent).

The above statistics, moreover, probably understate to a significant degree the participation by foreign workers and particularly those from Mexico and other Latin American countries, in the low-status labor force. There is a wide range of evidence indicating the presence in the U.S. population and labor force of large numbers of "illegal" aliens--immigrants who entered the country illegally or who overstayed their authorized period as visitors, students, or other temporary entrants. The most tangible evidence of the extent of illegal immigration consists of the statistics on deportation of apprehended aliens, compiled by the

Immigration and Naturalization Service. The number of such deportations rose from 465,000 in fiscal years 1961-65 to 1,142,000 in fiscal years 1966-60.7/ A very large percentage of these deportees consisted of Mexicans apprehended in the Southwest border States: however, increasing numbers of illegal aliens have been apprehended in other sectors of the country, including the Northeast and Midwest.

The contribution to labor supply of those aliens actually apprehended and deported in recent years has probably been modest. Most aliens have been apprehended in border areas after very brief stays of a few weeks or less; the statistics moreover apparently include large numbers of "repeaters." However, it is generally recognized that only a fraction of the "illegals" are actually apprehended. Based on a review of its operating experience and on certain necessarily arbitrary assumptions, the Immigration and Naturalization Service arrived at an estimate of approximately 1.0 million illegal aliens residing in the United States in early 1972, of whom about three-fourths (mainly Mexicans) were assumed to be illegal entrants and most of the remainder were individuals, such as tourists or students, who had overstayed their visas.8/ In the following 3 years, "estimates"--or guesses--concerning the number of such aliens residing here have escalated. Thus, in February 1975, the Commissioner of the Immigration and Naturalization Services advised the House Subcommittee on Immigration that: "We really don't know how many illegal aliens there are in the country. The estimates range from 4 million to 12 million: the actual number is probably somewhere in between--perhaps about 8 million or so."9/

Irrespective of the precise number of illegal aliens in the United States, there is a general concensus among informed sources concerning certain relevant characteristics:

1. Such persons mainly enter the United States, or stay here illegally, to improve their economic status. A very large portion are younger adults and are either working or seeking work.

2. Occupationally, such workers are heavily concentrated in the less desirable unskilled or semiskilled jobs, typically in menial service occupations, in farm labor or casual nonfarm labor and in low wage manufacturing industries.

3. Geographically, the largest concentration of such workers consists of Mexicans in the Southwest border area. However, substantial numbers, including many West Indies immigrants, are apparently located in eastern seaboard cities, e.g., New York City, Washington, D.C., and Miami, as well as in certain midwestern industrial cities, such as Chicago.

From the standpoint of our statistical analysis of occupational labor supply, it is reasonable to assume that most such illegal residents are not included in the official census enumerations, or if counted, are not likely to accurately report their country of origin.

Since the latter data served as our source for analysis of the foreign-born labor force by occupation, it is reasonable to assume that the size of the foreign-born labor force in low-status occupations in 1970, as well as its growth between 1960 and 1970, was substantially greater than reflected in the census counts for these years.

SUMMARY

In this chapter we have presented data on the changing composition of labor supply by occupation during 1960-70 from two separate--but related--perspectives. The first was the changes in occupational distribution of various social and demographic groups in the labor force, resulting in measures of overall changes in their respective occupational status. The second was the change in composition of the labor force within occupations, or occupational groups. From either vantage point, it is evident that very significant changes occurred in the composition of the work force in many low-status occupations.

The most significant of these changes were: (1) Extensive replacement of nonwhite workers, as well as of adult white men, in low-status jobs by young white workers, particularly males; (2) a substantial improvement in occupational status of nonwhite workers over the decade, particularly among better educated younger workers, aged 16 to 24; (3) increased utilization of part-time workers in many of these occupations, including both students and adult women; and (4) an increase in the proportion of foreign-born workers, mainly recent immigrants from Mexico and other Latin American countries, in low-status occupations.

The first of these developments, reflected in a substantial exodus of black workers from the lowest status jobs and in significant increases in their participation in white collar occupations, may well be the most significant, in terms of its long-range social consequences. Some of the influences contributing to this breakthrough have been suggested by our analysis, namely, the progress made in closing their "educational attainment" gap in relation to white workers and the favorable labor market climate of the second half of the decade of the 1960's. Perhaps of equal importance was the catalytic impact of the civil rights movement of the 1960's and of resulting government and private initiatives in the field of equal employment opportunity. The net effect was the generation of a social and psychological climate among white workers and employers--as well as among Negroes--which was conducive to their increased acceptance in occupations and industries that had been effectively foreclosed to them in the past.

The second dynamic force at work was a direct consequence of the post-World War II baby boom, which--predictably--brought in its wake a recordbreaking number of youthful entrants into the labor force during the past decade. This new postwar generation was also the most "educated"

generation in our history, as measured by the yardstick of years of schooling completed. However, the very fact that a large proportion of these youth continued their full-time education into their late teens and early twenties created a large supply of workers whose employment options were limited to the types of jobs amenable to part-time work schedules and which were geographically accessible to such youth. These youth, therefore, constituted a ready source of unskilled, casual labor for both low-level white-collar and blue-collar or service jobs, often serving as replacements for full-time adult nonwhite (as well as white) workers, who left these jobs in favor of better paying jobs in higher status occupations.

Finally, we have noted the increased role of the "newer" immigration, particularly from Mexico, the West Indies, and other Latin American countries, as an additional source of manpower for low-status occupations. Although the contribution of recent immigrants to the overall supply of lower status workers appears to have been modest at the national level--even after allowing for some considerable underreporting in the census statistics--it is clear from collateral evidence that this manpower source has been much more significant in areas such as southern California and New York City, to which these workers have gravitated in substantial numbers.

V. LABOR SUPPLY AND OCCUPATIONAL WAGE DIFFERENTIALS

INTRODUCTION

The preceding chapters have identified a number of significant changes in the size and composition of the labor force of lower level occupations in recent decades. We have not yet, however, attempted an assessment of the labor market implications of these shifts. For example, based on the "overcrowding" hypothesis, one would expect that the outflow of nonwhite workers from many lower level jobs, other factors being equal, would have been accompanied by an increase in relative wages for these jobs. Similarly, one might hypothesize that the general increase in educational level of workers would also have had the effect of narrowing occupational wage differentials, since a larger proportion of workers would become eligible to compete for the preferred higher level jobs.

Clearly, "other factors" have not been equal, as evidenced by the sharp increase in the number of new entrants into the labor force during the past decade, by the wide variations in growth of demand for various occupations, and by many other concurrent changes in occupational supply and demand factors. This chapter explores some of these recent relationships, based upon the relatively detailed data base available for the 1960-70 decade, in order to derive insights as to the implications of foreseeable future labor force trends upon the labor market for lower level occupations.

Economists have, of course, long recognized that changes in the size and characteristics of the work force are important influences upon the occupational wage structure. Beginning with Paul Douglas' landmark study in the 1920's, a number of studies of historical wage trends prior to World War II concluded that there had been a significant long-term trend toward narrowing of wage differences between skilled and unskilled workers. One general explanation advanced was that the sharp rise in educational attainment of the labor force had increased the supply of workers qualified for entry into white-collar jobs and into the more skilled blue-collar occupations at a faster rate than the growth of demand in these occupations. Concurrently, the stoppage of large-scale immigration--although partially offset by increased internal migration--was cited as a major factor checking the growth in labor supply for lower level jobs, particularly during periods of full or overfull employment, such as in the latter years of World War II.10/

In contrast, more recent studies of post-World War II experience have typically revealed a fairly stable pattern of occupational wage differences, or even some widening of these differences, depending upon the time periods and occupations selected for study. These have been attributed to a number of specific supply and demand factors affecting

particular categories of occupations or industries and--more generally--to a reduced sensitivity of the wage structure to labor market fluctuations, as a result of increased institutionalization of the wage-setting process.

Most of the earlier investigations of trends in wage structures were handicapped by inadequacies of historical wage data. The more comprehensive occupational earnings statistics available from the 1960 and 1970 censuses and from the Current Population Surveys have been used in this study for a more systematic exploration of the relationship between labor supply factors and changes in occupational wage structures, with particular emphasis upon the lower end of the occupational spectrum. Two sets of analyses have been conducted for this purpose. The first examines 1960-70 occupational wage trends for broad occupational groups. The second is a more intensive study of interarea differences in relative earnings in selected lower level occupations in 1969. In both studies, an attempt has been made to isolate the influence of variations in work force characteristics upon relative wages.

OCCUPATIONAL WAGE TRENDS, 1960-70

Since the late 1950's, the Bureau of the Census has conducted annual sample surveys of income of families and individuals, which have provided data on the median earnings of men and women workers employed full-time, on a year round basis, classified by the occupation of the longest job held by such workers. The latter data provide, for the first time, a "wage," or full-time earnings, series covering the full range of occupations of the labor force. One major limitation of this data source, however is the fact that, because of sample size, these occupational earnings data are available only for the standard census major occupation groups, with some further limited disaggregation within such large groups as operatives, male craft workers, and female clerical workers.

Based on these data, indexes of relative earnings growth have been computed for 1960 and 1970, based on the ratio of percentage growth of median earnings of men and women in a given occupation group to the corresponding percentage change for all male and female year-round full-time workers. These indexes, shown in the first column of table 9 indicate that earnings growth was greater than average both among certain of the more highly paid occupations, such as professional and managerial workers, and among some of the lowest paid occupation groups, such as male workers in farm occupations and female workers in private household and sales jobs. In contrast, blue-collar workers, as well as clerical workers of both sexes, experienced a less-than-average growth in relative earnings. Earnings of male and female service workers, other than those in private households, grew at about the average rate, as did earnings of men sales workers.

Table 9

Comparison of Indexes of Change in Relative Earnings, Employment Growth, and Unemployment Rates, 1960-70

Occupation Group	Relative earnings change		Relative employment growth		Relative unemployment growth	
	Index	Rank	Index	Rank	Index	Rank (inverse order)
MALES, TOTAL	100	--	100	--	100	--
Professional and technical workers	103	4	130	1	133	9
Managers, proprietors & officials, nonfarm	105	3	106	3	116	6
Clerical workers	97	7	100	6	112	5
Sales workers	100	6	93	7	126	7.5
Craftsmen and foremen	95	9	107	2	92	1
Operatives	92	10	101	5	106	3
Laborers, exc. mine and farm	96	8	91	8	95	2
Service workers, exc. private household	102	5	103	4	109	4
Farmers and farm managers	116	2	57	9	--	--
Farm laborers and foremen	119	1	49	10	126	7.5
FEMALES, TOTAL	100	--	100	--	100	--
Professional and technial workers	110	2	119	1	138	7
Managers, proprietors & officials, nonfarm	111	1	89	6	126	6
Clerical workers	95	6	115	2	115	5
Sales workers	107	3	92	5	104	4
Operatives	92	7	97	4	92	2
Private household workers	105	4	52	7	89	1
Service workers, exc. private household	101	5	113	3	95	3

Sources: Earnings: U.S. Bureau of the Census, Current Population Reports - Consumer Income, Series P-60, No. 39. Earnings data not shown for occupation groups with low sample size, e.g., male private household workers. Employment: U.S. Bureau of Labor Statistics, Employment and Earnings.

An initial simple hypothesis tested was that these differential occupational wage changes could be "explained" by differential occupational changes in labor demand, as reflected in actual employment trends. For this purpose, relative employment growth indexes, shown in the third column of table 9, have been compared with the corresponding earnings growth indexes. A direct comparison of the rank ordering of these two indexes provides very little support for this hypothesis. For example, among the male occupations, the two farm occupational groups--farmers and farm managers, and farm laborers and foremen--had experienced the most rapid employment decline and also the most rapid increase in relative earnings. Conversely, craft workers ranked second in employment growth but next to last in terms of relative earnings growth. Among female occupations, clerical workers ranked second in employment growth but next to last in earnings growth, whereas the reverse pattern applied to women in the managerial occupations. Women private household workers, whose employment had dropped sharply over the decade, had at the same time experienced an above-average growth in earnings. These comparisons--although based on a very limited number of observations--are sufficient to suggest that factors other than changes in relative demand played a major role in differential occupational wage rate changes of the past decade.

A second hypothesis that we subjected to this crude test was that differential wage rate changes were a function of changes in the "tightness" of the labor market for various occupations, as measured by differential changes in unemployment rates of experienced workers in each occupation group between 1960 and 1970. Again, a simple comparison of the rank orderings in table 9 provides no support for the hypothesis of an inverse relationship between unemployment and wage rate changes. Only two male occupation groups (sales workers, service workers) and two female groups (clerical workers, sales workers) showed a close correspondences ($\pm$ 1) in their relative earnings and their relative unemployment rate change rankings.

In order to further test the relationship between 1960-70 earnings changes and various labor supply and demand variables, a series of multiple regression analyses was conducted, using as the dependent variable in each case the percentage change in year-round, full-time wage and salary income in the 19 occupations (for men) and the 13 occupations (for women) for which such data were published by the Bureau of the Census. To minimize sampling errors, earnings averages for 1959-61 and 1969-71 were used for the terminal years.

We postulated that earnings growth would vary positively with employment growth and with the growth in the educational level of the occupation's work force, but that it would vary inversely with the change in the proportion of women, nonwhites, youth, and/or part-time workers in the occupation. Because of the very small number of observations and of problems of intercorrelation, only three or four of the above variables could be included in any one test.

The results generally confirmed the findings based on our initial inspection of earnings changes by major occupation groups, i.e., that no simple model could satisfactorily explain the changes in relative earnings between 1960 and 1970 for relatively broad occupational groupsings. The amount of variance explained ($\bar{R}^2$) did not exceed .34 in any of these tests. More important, the few labor supply variables that met or approached the accepted confidence levels did not perform consistently in the separate models for men and women workers.

In the analysis of occupational earnings changes for men workers, the only explanatory variable that met standard tests of significance, at the .90 level of significance or higher, was the relative growth of nonwhite workers in the occupation. Although the sign was in the expected negative direction, the magnitude of the influence of shift in racial composition was found to be small: a 1-percentage point increase in the average percentage of nonwhite men in occupations was, on the average, associated with a reduction of .05-percentage points in the growth of male earnings. Employment growth also varied in the expected direction, for men, although its effect was very small and it marginally failed to meet the .90 confidence level.

For women workers, three variables were found to be significant: Employment growth, the change in percentage of nonwhites, and the change in the percentage of part-time workers. The latter had the expected negative effect upon growth in earnings of full-time, year-round workers. However, the other two variables--employment growth and change in percentage of nonwhites--varied in the opposite direction from that postulated and which had been observed for men.

The lack of generalizable findings from this necessarily limited analysis simply tends to confirm the findings of other recent studies of trends in the wage structure. For example, a 1965 Organization for Economic Cooperation and Development study covering post-World War II experience in 10 countries, including the United States, had found some evidence of a positive association between employment and wage growth in particular industries and occupations, but in general found that "there is no evidence of a strong systematic statistical relationship between changes in earnings among individual industries and variations in total employment... Moreover, in most instances where the data provide evidence of a statistically significant relationship, it is clear that the explanatory role of relative wages is overshadowed by the influence of other factors."11/

It is, of course, possible to offer reasonable explanations for some of the differential occupational wage trends during the decade of the 1960's, based on specific factors relevant in each occupation or industry. Thus, the rapid growth in earnings of professional workers during the 1960's is explainable by the strong expansion of demand in such fields as teaching and engineering and the limited growth in supply

of college graduates, as a result of the relatively small size of the age group reaching college graduation age during most of this decade. Occupations such as clerical jobs, on the other hand, experienced a much smaller relative wage growth because they were able to utilize the much larger and growing pool of female workers (of all ages) who were not college graduates and who regarded these jobs as preferable to blue-collar or service occupations. At the other extreme of the occupational spectrum, relatively large percentage increases in earnings for certain low-wage occupations--such as male farm workers and female household workers--in the face of sharp reductions in employment, suggested that large-scale withdrawals of workers from these occupations and reluctance of younger workers to enter these low-wage, low-status occupations may have been the decisive factors. Finally, expansion of coverage of minimum wage laws during the 1960's to several million additional workers may have contributed to the larger-than-average increases in earnings for certain other low-wage groups such as female sales and service workers.

INTERAREA DIFFERENCES IN RELATIVE WAGES

Our second approach to analysis of occupational wage differentials was based on a series of cross sectional models, limited to a number of more specific lower level occupations. A total of 10 occupation/sex categories were selected for this purpose: Chambermaids and maids (female); cleaning service workers (male); cooks (male and female); construction laborers (male); hospital attendants (male and female); laundry and dry cleaning operatives (male and female); and sewers and stitchers (female). Of these occupations, all but two are classified in our group V status group, and these accounted for approximately 30 percent of the experienced civilian labor force in group V occupations in 1970. The remaining two occupations--hospital attendants and sewers and stitchers--fall within the group IV category.

A fully articulated econometric analysis of the labor market for these occupations would logically require a simultaneous model in which: (1) Labor demand in a specific occupation and area is expressed as a function of wages and of various demand-specific variables (e.g., number of households, family income, industry mix, etc.); (2) labor supply is expressed as a function of wages and of the various labor supply factors (e.g., sociodemographic characteristics of the area's labor force; alternative labor market opportunities); and (3) occupational wage rates in turn are determined as a function of the relevant labor supply and demand equations. Such a system of equations did not prove to be feasible for this range of occupations.

As an alternative, a "reduced form wage equation" was employed, which includes as explanatory variables a combination of variables hypothesized to affect labor supply and labor demand in various occupations, but which only purports to identify the most significant variables. To illustrate, it appeared reasonable to include a variable

such as family income in our model, both because of its possible relevance to labor supply of secondary family members and because of its relevance to labor demand, notably in personal service occupations, such as laundry workers. The reduced form equation does not however permit us to isolate each of these separate influences, only the net effect.

The dependent variable for this model was the ratio of earnings of full-year workers in the given occupation to a standardized earnings measure for each area. The latter was computed separately for men and women, based on a weighted average of earnings of full-year workers in 16 male occupations and in 13 female occupations. (National employment totals by occupation group, and for detailed occupations, were used as the weighting factors.) These occupations include a range of nonprofessional and nonmanagerial jobs typically found in all larger metropolitan areas. The resulting averages may be considered as reasonable approximations of average wage differentials among SMSA's for full-year workers. In turn, the ratio of the earnings of workers in a specific occupation to this standardized earnings measure (W_{ij}/W_{STD}) provides a uniform measure of relative earnings in the given occupation.

We hypothesized that relative wages in lower level occupations were a function of the following types of variables: (1) Race and ethnic composition of the occupation and/or SMSA; (2) relative labor market opportunities of minority groups in the SMSA; (3) age composition of the occupation's and/or SMSA's labor force; (4) educational attainment of workers in the occupation and/or SMSA; (5) general labor market conditions in the SMSA, e.g., unemployment rates; (6) average family income in the SMSA; (7) average AFDC payments in the SMSA; (8) extent of unionization of the occupation; and (9) selected other occupation-specific variables that might account for differences in relative wages.

The data base for this model consisted mainly of published 1970 decennial census data for 68 SMSA's with populations of 250,000 or more. Two or more alternative formulations of many of the sets of variables described above were included in our data base. In all, a total of 30 separate independent variables were tested.

Although the data base provided by the detailed 1970 census area labor force data was reasonably comprehensive, it still suffered from a number of important limitations for our purposes:

1. Annual earnings of all workers employed 50 to 52 weeks in 1969, classified by their principal occupations in 1969, served as our measure of occupational wage rates. This measure thus includes earnings of workers who were employed year round, but on a part-time basis, in contrast to the CPS annual earnings data for full-time, year-round workers cited earlier in this chapter.

2. The more specific census occupations used in this analysis were still too broad in most cases for precise measurement of occupational earnings differentials by area, because of interarea differences in skill content and industry distribution.

3. Demand-specific variables associated with the selected low-level occupations could not be adequately specified in most cases. The absence of an occupation/industry matrix at the SMSA level was a significant handicap in our analysis of those occupations that are distributed among two or more industries with differing industry wage structures.

4. Unionization--which is recognized as an important variable in most wage structure studies--could only be estimated indirectly and partially based on the ratio of statewide membership in the union identified as including the largest number of members in a particular occupation or industry to employment in that occupation or industry, by State, as reported in the 1970 census.

Our final methodological note concerns the estimation of the reduced form wage equation. A stepwise regression technique was employed, rather than a fixed model. Its effect was to include the maximum number of significant variables--among the whole range of variables available--which contributed to the explanation of interarea variations in relative earnings for the specified occupations. This form excludes certain variables that, although separately significant, do not contribute to maximization of explained variance.

The results of this analysis are presented in summary form in table 10. All of the resulting equations met statistical tests of significance at the .99 confidence level with coefficients of determination ($\bar{R}2$) ranging from .69 for male construction laborers to only .16 for female sewers and stitchers. The elasticities in table 10 measure the impact, for example, of a 1-percent variation in a specified "significant" variable upon changes in relative wages, at the mean, holding other factors constant. An inspection of this table indicates that, for the limited range of occupations under study, the influence of various labor market factors upon relative wages is quite uneven. The more significant results are discussed below:

Racial-Ethnic Factors--On the basis of prevailing theories of the dual or "segmented" labor market, we hypothesized that relative wates in lower level occupations would be lower in those areas that included large concentrations of black or Spanish-origin workers in the occupation, particularly where alternative job opportunities for such workers are inferior. Some support for this premise was found in two or three of the male occupations, but in none of the female occupations. A higher concentration of black workers in the occupation was found to be associated with a lower relative wage for that occupation in the

Table 10

Reduced Form Wage Equation Elasticities for Significant Variables
Calculated at Means (Dependent Variable: $(W_{ij}/WSTD_j)$

	Race/Ethnic				Age			Education		Age/ Education
	$PCTBLK_{ij}$	$\Delta_{WKOP\ 60-70_j}$	$PCTLFSPO_j$	$\frac{FYED_{ij}}{FYEM_{ij}}$	$PCTYOUTH_j$	$\frac{PCTYOUTH_{ij}}{PCTYOUTH_j}$	$LFPR16-24_j$	$PCTED12_{ij}$	$PCT\ BLKED12_{ij}$	$PCTYOUTH_j \times PCTED12_{ij}$
MALE										
Hospital attendants			.034***				-.371*	-.542**		
Construction laborers	-.302***			.356***		-.112***				
Cooks		.042***			-.165***				-.045***	
Laundry and dry cleaning operatives	-.088***				-.054***					
Cleaning service workers	-.073***			.324**						
FEMALE										
Hospital attendants							-.599***			
Sewers and stitchers	.023**									-.183**
Cooks	.042**				-.271**		.250***		-.081***	
Charwomen, chambermaids					-.107***				-.068**	
Laundry and dry cleaning operatives			-.008**							

	Labor Market		Income		Region	Unioni-zation	Growth	Industry Mix		$\bar{R}^2$
	WNR_j	$PCTM16-21\ NISMILF$	$FAMINC_j$	$AFDC$	$SOUTH_j$	$PCTUNION_j$	$\Delta_{EMP\ 60-70_{ij}}$	$PCTSSR\ HOTELS_j$	$PCTSSR\ EATDRK_j$	
MALE										
Hospital attendants					.054**					.335***
Construction laborers										.605***
Cooks		-.076**						.054***		.492***
Laundry and dry cleaning operatives			.200**							.258***
Cleaning service workers						.010*				.690***
FEMALE										
Hospital attendants	-.160**		-.600***							.266***
Sewers and stitchers					.030***	.035**				.164***
Cooks				.071**					.215***	.585***
Charwomen, chambermaids			.471***			-.017**				.398***
Laundry and dry cleaning operatives	-.099***					.018***	.149***			.298***

*** = significant at .99 level of confidence
** = significant at .95 level of confidence
* = significant at .90 level of confidence

NOTE: See following page for description of variables.

List of Independent Variables Included in Reduced Form Wage Equation Models - (Table 10)

Variable	Description	Source
RACE/ETHNIC		
1. $PCTBLK_{ij}$	Percent of blacks (sex specific) in SMSA labor force, 1970	Table 172, 1970 Census Detailed Characteristics
2. $\triangle NWPOP60\text{-}70_j$	Change in percentage of nonwhite persons in SMSA Population, 1960-70	Country and City Data Book, 1972
3. $PCTLFSPO_j$	Percent of Spanish-origin workers in labor force of SMSA, 1970	Table 172, 1970 Census Detailed Characteristics
4. $\frac{FYEB_j}{FYEW_j}$	Ratio of median earnings of black to white year-round workers in SMSA, 1969	Table 172, 1970 Census Detailed Characteristics
5. $PCTYOUTH_j$	Percent of persons (sex specific), age 16-24, in SMSA labor force, 1970	Table 174, 1970 Census Detailed Characteristics
6. $\frac{PCTYOUTH_{ij}}{PCTYOUTH_j}$	Relative concentration of youth (sex specific), occupation, 1970	Table 174, 1970 Census Detailed Characteristics
7. $LFPR16\text{-}24_j$	Civilian labor force participation rate of persons, 16-24 years of age (sex specific), 1970	Table 164, 1970 Census Detailed Characteristics
8. $PCTED12_{ij}$	Percent of persons with 12 or more years of education in occupation, 1970	Table 197, 1970 Census Detailed Characteristics
9. $PCTBLKED12_j$	Percent of blacks in total SMSA labor force with 12 or more years of education, 1970	Table 197, 1970 Census Detailed Characteristics
10. $PCTYOUTH_{ij} \times PCTED12_j$	Percent of occupation, 16-24 years of age, weighted by percent of SMSA labor force with 12 or more years of education (sex specific), 1970	Tables 174, 197, 1970 Census Detailed Characteristics
11. UNE_j	SMSA unemployment rate (sex specific), 1970	Tables 164, 1970 Census Detailed Characteristics

List of Independent Variables Included in Reduced Form Wage Equation Models - (Table 10) (continued)

Variable	Description	Source
12. PCTMI16-21 $NISNILF_j$	Percent of males in SMSA, 16-21 years of age, who are not in school and unemployed or not in labor force, 1970	Table 83, 1970 Census General Social and Economic Characteristics
13. $FAMINC_j$	Median family income in SMSA, 1969	County and City Data Book, 1972
14. $AFDC_j$	Average monthly benefit from aid to families with dependent children, by SMSA, 1972	County and City Data Book, 1972
15. $SOUTH_j$	Southeast, Southwest SMSA's = 1 Otherwise = 0	
16. $PCTUNION_j$	Union membership (selected unions) as ratio to employed workers in occupation, by state, 1970	Unpublished union membership statistics by state, selected unions, Bureau of Labor Statistics and Tables 170, 171, Detailed Characteristics
17. $\triangle EMP60\text{-}70_{ij}$	Percent change in SMSA occupational employment, 1960-70	Table 171, 1970 Census and Table 121, 1960 Census Detailed Characteristics
18. $PCTSSRHOTELS_j$	Retail expenditures on hotels and lodgings relative to selected services, by SMSA, 1967	County and City Data Book, 1972
19. $PCTSSREATDRK_j$	Percent of total retail sales receipts due to eating and drinking establishments, by SMSA, 1967	County and City Data Book, 1972

case of construction laborers, male laundry and dry cleaning operatives, and male cleaning service workers. The impact on relative wages was considerable for construction laborers; it was quite small in the remaining two occupations.

For two of these three male occupations, construction laborers and cleaning service workers, the ratio of full-year earnings of male black workers to those of white workers proved more significant in explaining interarea variations in relative wages than did the proportion of black workers employed. The former variable was designed as a measure of relative earnings opportunities for black workers in each area. Hence, this finding implies that--at least in the two specified occupations--as black workers approach parity in labor market opportunity, significant increases in relative wages in certain "low-level" occupations in which they have been previously concentrated may be expected.

Youth--A larger supply of youthful workers aged 16 to 24 years was expected to have a depressing effect upon wage levels in low-level occupations, on the premise that youth without specialized training--in common with minority workers--tend to be "overcrowded" in these occupations. Moreover, it would be reasonable to expect an adverse differential for youth, even in less skilled jobs, because of their lesser experience and productivity. Several measures of youth labor supply were included in our data base, i.e., the percentage of youth in the specified occupation, the ratio of the percentage of youth in the occupation to the percentage of youth in the area's labor force as a whole, and the labor force participation rate of youth in each area. These "youth" variables--in varying forms--proved to be significant, and in the expected direction, in almost all of the occupations studied.

The interpretation of these relationships is, however, clouded by the nature of the dependent variable used. Since we have been obliged to use annual earnings of year-round--but not necessarily full-time--workers as our proxy for occupational wage levels, it is possible that interarea differences in occupational earnings were affected, to some extent, by interarea variations in the proportion of regular part-time workers employed in certain occupations, such as cooks or domestic workers (which typically utilize large proportions of part-time employees). Since youth are a major component of the part-time labor force, the regressions may thus have reflected interarea variations in hours worked per year, rather than in wage rates. However, in view of the fact that regular part-time workers constitute only 10 percent of the total labor force of workers employed 50 to 52 weeks, it is probable that, though this factor has caused some upward bias in the resulting elasticities, the youth variable would have been significant and in the expected direction even if unbiased estimates of relative wage rates were available. To illustrate, the "youth concentration" variable proved significant in the construction laborer wage equation, even

though only 6 percent of its year-round labor force consists of regular part-time workers.12/

Educational Attainment--We had hypothesized that a "more educated" labor force would, generally, have the effect of reducing the labor supply and increasing relative wages in lower level occupations. Educational attainment in our model was measured alternatively as the percentage of all workers in each occupation with 12 or more years of education and as the percentage of black workers in the area with 12 or more years of education. The first of these variables was found to be significant in relation to relative wages only in the case of male hospital attendants, but with a negative sign. In three other occupations--male and female cooks and female charwomen and chambermaids--a higher proportion of black workers with 12 or more years of school was also associated with a lower relative wage, although with low elasticities.

Unemployment--We assumed that areas with higher unemployment rates would tend to have lower relative wages in low-level occupations, other factors being equal. This relationship was validated in two of the five female occupations, hospital attendants and laundry operatives. It did not prove to be significant for any of the male occupations. An alternative market measure, the percentage of males 16 to 21 years, who were neither in school nor in the labor force, did prove to be significant for male laundry operatives, although with a low elasticity.

Income--Average family incomes or alternative sources of income, such as AFDC, were assumed to have an impact upon relative wage levels in low-level occupations, both through their influence upon labor supply and upon labor demand, in certain of the industries employing workers in such occupations. On the labor supply side, we hypothesized that higher alternative income levels, e.g., through earnings of other family members or AFDC, would tend to raise the reservation wage of workers whose job choices were limited to low-level occupations. On the demand side, higher levels of family income were postulated as increasing the demand for personal services, hence, serving also to increase relative wages in occupation related to personal service activities. Thus, generally, a positive relationship was postulated.

The results for these variables proved to be mixed, however. The family income variable met our tests of significance, in the expected positive direction, in only two occupations--male laundry and dry cleaning workers and charwomen and chambermaids. It was significant but negative in the case of female hospital attendants--a "higher level" group IV occupation. The AFDC variable was significant and positive for only one occupation, female cooks. It should be noted, however, that alternative model formulations for selected occupations, as described in chapter VI, did identify the AFDC variable as significant in

explaining interarea wage and/or employment growth differentials among two other low wage female occupations, domestic maids and sewers and stitchers in southern cities.

Unionization--Higher rates of union membership were expected to be positively associated with relative wage levels in our model. These unionization ratios were found to be significant, in the expected direction, in three of the eight occupations for which such ratios could be derived, i.e., male cleaning service workers, female sewers and stitchers, and female laundry and dry cleaning operatives. The unexpected negative sign was found in one occupation, female charwomen and chambermaids. All elasticities were very low (in the .01 to .03 range), possibly due in part to the inadequacy of the union membership data for our purposes.

SOME TENTATIVE CONCLUSIONS

In this chapter, we have attempted to develop quantitative measures of the relationship between specified labor supply variables and occupational wage structures based both on a comparison of changes by broad occupational groups, for the 1960-70 decade, and on a more detailed comparison of interarea differences in relative earnings in 1969, for selected lower level occupations. Any attempt to generalize from these findings must be carefully qualified in view of the many limitations of the available data base and of our model specifications. The following observations must therefore be interpreted as tentative findings, supported by some empirical data.

Generally, our analysis has tended to confirm findings of other investigations concerning the relative stability of occupational wage structures, at least over relative short timespans, such as a decade. Thus, the substantial changes in labor supply during the decade of the 1960's were accompanied by only limited changes in relative wages for major occupational groups. Similarly, our cross sectional analysis for 1969-70 generally resulted in relatively low elasticities for those labor supply variables that proved to be significant. It is probable that many institutional factors impinging upon the wage-setting process, as well as a relatively high degree of adaptability of the labor force, contributed to the general overall stability of the occupational wage structure.

Nevertheless, both the 1960-70 comparisons and the cross sectional analyses have provided significant indications of labor supply impacts upon relative wages in specific occupations--and, by inference--upon occupational employment levels, as well. Some of these indications are summarized below:

(1) Hired farm laborers and private household workers both experienced greater-than-average wage increases in the decade of the 1960's, despite sharp reductions in their employment levels. Both of

these occupations have been at or near the bottom of the occupational hierarchy in terms of pay and status; they have relied upon blacks and other disadvantaged population groups for their labor supply in the past. These are highly competitive labor markets; neither of these occupations was covered by minimum wage laws or was unionized to any appreciable extent during this decade. It is reasonable to infer that the increase in relative earnings and some portion of the employment reduction in these occupations were direct consequences of the expansion of job opportunities in higher wage, higher status occupations for many of the workers previously in these jobs, as well as of the reluctance of younger minority group workers to enter these occupations.

(2) Our analyses also provided some partial support for the "overcrowding" hypothesis, i.e., that the concentration of black workers in low-status occupations has had the effect of reducing relative wages in such occupations. The supporting evidence, was, however, limited to male workers.

(3) Differential concentrations of youth and/or part-time workers in particular occupations appeared to have had a depressing effect upon earnings of year-round workers in some of these occupations. The evidence for this finding from our cross sectional analysis is clouded because of the likelihood that these relationships reflected the combined effect of both increased labor supply pressure and lower hours of work associated with higher utilization of younger workers in these jobs. However, our analysis of 1960-70 occupational earnings changes for female workers--limited to those working year round on full-time jobs--also found that earnings rose less in those occupations that included increased proportions of part-time workers.

(4) Higher unemployment rates or related indicators of labor market surplus were found to have a significant (but small) depressing effect upon relative wages in three of the ten lower level occupation/groups included in our cross sectional analysis, but were not found to be a significant explanatory variable in our analysis of occupational wage trends for 1960-70. It should be noted that our cross sectional data base was limited to unemployment rate observations in a particular week, i.e., the 1970 census survey week, and therefore provided--at best--a limited measure of the impact of labor market conditions upon relative wages by occupation.

(5) Finally, although we had hypothesized a positive relationship between interarea differences in educational levels of workers in particular lower level occupations and relative wages, this relationship was not confirmed by either our 1960-70 comparisons or our cross sectional studies.

INTRODUCTION

At the outset of the present study, we offered a hypothesis that as a result of a number of recent social and demographic trends, the earlier manpower sources for staffing lower level occupations were declining and that continuation of these trends might require a number of significant labor market adjustments to meet anticipated needs of the economy for lower level manpower in future decades. Our detailed review of recent trends in occupational labor supply indicated that these trends were operative in the 1960's but that their effect was, at least temporarily counterbalanced by the exceptionally large inflow of new entrants into the labor force, many of whom replaced nonwhites as well as white adults in the lower status occupations.

Looking ahead to the coming 10 year period, we can, however, anticipate some significant shifts in the balance of supply and demand factors affecting low-level occupations. On the supply side, there will be a substantial reduction in the rate of inflow of young workers into the labor force from the peak rates of the 1960's, as well as a reduced net inflow of adult women. Further, despite some recent slowdown in college enrollment rates, the educational attainment of the labor force will continue to rise, as younger and more educated workers replace older, less educated workers, in the course of the decade. These and other factors will tend to constrain the overall supply of workers for low-level jobs under conditions of high aggregate demand for labor.

The first part of this chapter describes the methods used to project the "expected" distribution of the labor force, in 1980 and 1985, by broad occupational status group, taking into account the projected changes in labor force composition. These projections are then compared with projections of employment, or labor requirements, to provide a preliminary assessment of possible occupational imbalances. The final section of this chapter discusses the probable nature and direction of labor market adjustments that may be required in various occupations.

OCCUPATIONAL LABOR FORCE PROJECTIONS

Our estimates of the "expected" distribution of the labor force by broad occupational groups in 1980 and 1985 were based on: (1) Projections of the labor force by age, sex, race, and educational attainment, and (2) projections of occupational participation rates for each of these population subgroups:

Labor Force Projections--BLS projections of the labor force by age, sex, and educational attainment to 1990, published in 1973, were

adopted as a point of departure.13/ Since the BLS labor force projections referred to the total labor force, including the Armed Forces, and were on an annual average basis, a series of adjustments was needed for comparability in coverage and seasonal level to corresponding decennial census statistics for the experienced civilian labor force in 1960 and 1970. A reconciliation between the BLS total labor force projections and our projections of the experienced civilian labor force for March 1980 and March 1985 is presented below:

	Millions	
	1980	1985
Total Labor Force, Annual Average, Comparable to CPS	101.8	107.7
Less: Armed Forces Projections	-2.0	-2.0
Less: Adjustment for Differences between March 1980 Labor Force and Annual Average Labor Force	-3.4	-4.2
Civilian Labor Force, March 1980	96.4	101.5
Less: Experienced Workers, Occupation Not Reported	-4.3	-3.6
Less: Inexperienced Civilian Labor Force	-0.6	-0.4
Experienced Civilian Labor Force with Occupation Reported, Comparable to Decennial Census	91.5	97.5

The BLS projections for the total labor force indicate that the overall rate of labor force growth during the 1970-80 decade will be only slightly less than the high growth rate of the 1960's, reflecting the continued movement into the labor force of the large post-World War II generation born in the 1950's and early 1960's, as well as further increases in female labor force participation. The rate of labor force growth is, however, expected to decline sharply during the decade of the 1980's, mainly as a result of reduced entries into the labor force, reflecting the sharp reduction in birth rates during the 1960-70 decade. As a result, the average annual percentage increases (arithmetically computed) will decline from 3.7 percent in the 1970-80 decade to 1.2 percent between 1980 and 1985. The shifts in labor force composition associated with these overall trends are described below:

Age--Labor force growth will be most rapid in the 25 to 34 year age group, reflecting the maturing of this peak post-World War II age class. This age group of workers is projected to increase by 51.5 percent between 1970 and 1980 as contrasted to a projected increase

of 18.5 percent for the total labor force. Conversely, the number of young workers aged 16 to 24 years will increase by only 19 percent in the 1970's, reflecting the initial impacts upon the labor force of the slowdown in birth rates that began in the early 1960's. Within the latter age group, the teenage labor force, aged 16 to 19 years, will experience a particularly sharp reduction in its growth rate, from 46.4 percent in the 1960-70 decade to only 9.1 percent between 1970 and 1980.

This pattern will be intensified during the 1980-85 period, which will experience the full impact upon labor force entries of the recent birth rate reductions. During this period, the number of 16 to 19-year-olds in the labor force is projected to decline by 14.1 percent, while those in the 20 to 24 year age group will drop by 2.8 percent. There will also be a sharp reduction in the rate of growth in the 25 to 34 year age group, from an average annual percentage increase of 5.2 percent in the 1970's to 2.2 percent in the 1980-85 period.

The sharp reduction in new labor force entrants, implicit in these comparisons, has an important bearing upon the availability of workers for lower level jobs since--as we have seen--younger workers, and particularly those in student age groups, have been a major and growing source for many of these jobs. It also has broader implications for the extent of adaptability of our labor supply to shifts in the economy's labor requirements in view of the much greater mobility of younger out-of-school workers as evidenced by virtually all studies of worker mobility patterns.

Sex--The BLS labor force projection assumes a slowing down in the overall growth of labor force participation of women during the period 1970-85, compared with the preceding decade, partly based on the increased concentration of the female working age population in the 25 to 34 age group, during which many women have not been available for work because of child rearing responsibilities. As a result, women are expected to account for a smaller percentage of total labor force gains than in the 1960's. Many women workers, particularly those re-entering the labor force after interruptions for marriage and child rearing, have been constrained in their choices to lower status jobs, either in white-collar or in blue-collar or service occupations. The projected slowdown in growth in this source of labor supply can be expected to tighten the labor supply situation in many low-status service-type occupations, as well as in lower paid clerical and sales occupations, which are predominantly staffed by women workers.

Race--Based on our projections for the experienced civilian labor force, the proportion of nonwhite workers will increase from 10.7 percent in 1970 to 11.3 percent in 1980 and to 11.6 percent in 1985. This results from a lesser decline in nonwhite, than in white, birth rates during the early 1960's--hence, in a larger proportion of

nonwhites among new labor force entrants in the late 1970's and 1980's, as well as from an assumed reduction in the rate of decline in labor force participation of nonwhite men, compared with the 1960-70 experience.

In view of the continued higher concentration of nonwhites in low-status occupations, an increase in their labor force proportion would be expected, other factors being equal, to augment the labor supply for lower level jobs. This effect is likely to be more than offset, however, by the higher education level of nonwhite entrants to the labor force and by a continuation of the exodus of black workers from the lowest status "menial type" occupations.

Educational Attainment--The projections of the 1980 and 1985 experienced civilian labor force, by educational attainment, reflect a continued overall trend toward a more educated labor force as measured by length of formal schooling, with a further gradual narrowing in the educational gap between white and nonwhite workers. Thus by 1985, 77.6 percent of all experienced workers in the civilian labor force, 25 years and over, will have completed at least 12 years of education as contrasted with only 48.3 percent in 1960 and 61.5 percent in 1970. The projected percentage of nonwhite workers, 25 years and over, with a completed high school education is expected to continue to rise sharply, to 61.6 percent in 1985, and by that year it will approximate the corresponding percentage among white workers in 1970.

PROJECTED DISTRIBUTION OF LABOR FORCE BY OCCUPATION

The general method followed in our projections of the "expected" occupational distribution of the labor force was to examine the 1960-70 changes in the occupational distribution of workers, stratified by age group, sex, and educational attainment, and to extrapolate the percentages in specific occupations of each of these subgroups to 1980 and 1985.

Two broad age groups were employed for this purpose--ages 16 to 24 and ages 25 and over. The occupational participation rate trends for the age 16 to 24 group in 1960-70 by sex were further disaggregated for workers in the following more specific age groupings: 16 to 17 years, 18 to 19 years, and 20 to 24 years, and were separately extrapolated to 1980 and 1985. The projections for workers 25 years and over were disaggregated by sex, race (white and nonwhite), and by three broad educational attainment groups (less than 12 years, 12 years, and 13 or more years of school completed).

The method used in extrapolating occupational participation rates for each of these demographic groups premises a declining rate of change in these rates, compared with that experienced in the 1960-70 decade. This assumption appears reasonable because of some of the unique characteristics of the 1960-70 decade, i.e., (1) the shift from an economy

Table 11

Projections of the Experienced Civilian Labor Force by Major Occupational Status Group and Sex: Actual, 1970; Projected; 1908 and 1985 1/

Occupational Status Group	No. (millions)			Percent distribution			Percent change		
	1970	1980	1985	1970	1980	1985	1970-85	1970-80	1980-85
TOTAL, BOTH SEXES	75.1	91.5	97.5	100.0	100.0	100.0	29.8	21.8	6.6
Group I	10.6	15.1	17.6	14.2	16.5	18.1	65.8	41.4	17.2
Group II	24.8	32.0	34.8	33.0	35.0	35.7	40.1	28.9	8.7
Group III	15.9	18.4	19.2	21.1	20.1	19.7	21.1	16.2	4.2
Group IV	15.6	17.3	17.4	20.7	18.9	17.9	11.9	11.2	0.7
Group V	8.2	8.7	8.5	10.9	9.5	8.7	2.9	5.9	-2.8
MALES, TOTAL	47.0	56.0	59.5	100.0	100.0	100.0	26.6	19.1	6.3
Group I	6.3	8.9	10.4	13.4	15.9	17.5	65.4	41.3	17.0
Group II	12.1	15.4	17.0	25.8	27.4	28.5	39.9	26.7	10.5
Group III	13.2	15.1	15.7	28.2	27.0	26.4	18.9	14.4	3.9
Group IV	10.0	10.9	10.9	21.4	19.5	18.4	9.0	8.8	0.2
Group V	5.3	5.7	5.5	11.3	10.1	9.2	2.6	6.6	-3.7
FEMALES, TOTAL	28.1	35.5	38.0	100.0	100.0	100.0	35.2	26.3	7.0
Group I	4.4	6.2	7.3	15.5	17.4	19.1	66.3	41.6	17.5
Group II	12.7	16.6	17.8	45.2	46.8	46.8	40.3	31.0	7.1
Group III	2.6	3.3	3.5	9.4	9.3	9.1	32.0	25.3	5.3
Group IV	5.5	6.4	6.5	19.7	18.0	17.1	17.3	15.4	1.6
Group V	2.9	3.0	3.0	10.3	8.5	7.9	3.4	4.7	-1.2

1/ Data for 1970 adapted from U.S. Census of Population, public use samples. Data exclude workers not reported by occupation.

operating well below full employment levels at the beginning of the decade to one characterized by much higher levels of aggregate labor demand at the end of the decade; and (2) the significant breakthrough in occupational opportunities for many black workers during the decade, as a consequence of the "Civil Rights Revolution" and of related socio-economic factors.

The effect of this procedure, thus, is to give much greater weight in the resulting occupational labor force trend projections to the effects of trends in the demographic composition of the labor force, as contrasted to the more uncertain trends in occupational participation rates.

The projections of the "expected" experienced civilian labor force, although derived from more detailed estimates for some 17 occupational subgroups, are limited in this chapter to data for the 5 major occupational status groups, and--separately--for the 10 standard major census occupation groups. The major trends are summarized below:

Occupational Status Group Trends

The proportion of workers who will be available in the two higher status groups, groups I and II, will continue to grow, from 47.2 percent in 1970 to 53.8 percent in 1958, reflecting the combined effect of such factors as increased education, the reduced proportion of youth in the labor force, and the projected continuation of the 1960-70 pattern of upward mobility of nonwhite workers. The proportion in group III, which includes mainly craft workers and certain higher paid operative occupations, would remain relatively stable, comprising 19.7 percent of the experienced civilian labor force in 1985, compared with 21.1 percent in 1970. Conversely, the two lowest occupational status groups, groups IV and V, are expected to decline from 31.6 percent in 1970 to less than 26.6 percent in 1985.

The impact of changes in the size and composition of the labor force upon availability of workers for low-level occupations is likely to be most pronounced during the 1980-85 period, when overall labor force growth rates will decline sharply. Thus, compared with a projected increase of 6.6 percent in the total experienced civilian labor force between 1980 and 1985, the number of workers available for group V occupations is expected to decline by nearly 3 percent, while the group IV category would increase by less than 1 percent. The major factor contributing to the decline in the group V labor force between 1980 and 1985 is the projected reduction in the number of younger workers aged 16 to 24, an age group that--as we have seen--has contributed disproportionately to the supply of workers for many lower level occupations.

Census Occupation Group Trends

Table 12 presents comparable projections for 10 major census occupation groups. Even this limited disaggregation of our occupational labor force projections indicates a greater disparity in potential labor supply growth rates than reflected in the trends for the five broad status groupings. The supply of professional and technical workers--corresponding to group I in our status classification--is projected to increase by nearly 66 percent between 1970 and 1985, more than twice as rapidly as the overall rate of growth of the experienced civilian labor force. Two other white-collar occupation groups--managers and administrators and clerical workers--are also projected to experience above average rates of growth in labor supply. Sales workers, however, are expected to grow at a significantly lower rate, partly because of the reduced proportion of youth in the labor force, who now fill a significant proportion of the lower paid jobs in this occupation.

All of the blue-collar occupation categories are projected to have a less-than-average increase in labor force in the period 1970-85, ranging from 22 percent for craft workers to only 6 percent for nonfarm laborers. The service workers occupation group, which encompasses a particularly heterogenous range of occupations in terms of pay and status, is projected to grow by 12 percent while workers available for farm occupations are expected to decline by 13 percent, continuing their long-term declining trend.

COMPARISON OF OCCUPATIONAL LABOR FORCE AND EMPLOYMENT PROJECTIONS

The Bureau of Labor Statistics has, for a number of decades, conducted a program of long-range forecasting of employment by occupation for use in its occupational outlook studies and for related purposes. The most recent of these projections, published in summary form in December 1973, were adapted for use in comparison with our projected trends in labor force availability by occupational group. These BLS employment projections assumed that "fiscal, monetary, and manpower training and educational program will achieve a satisfactory balance between relatively low unemployment and relative price stability," as illustrated by an assumed 4 percent unemployment rate and a 3 percent annual increase in the implicit GNP price deflator. Another key assumption was that efforts to solve environmental problems and energy shortages "may consume more productive resources but will not have more than a marginal effect on long-term economic growth."14/

The resulting projections may generally be described as estimates of prospective demand for workers by occupation in a full employment economy, based on the stated assumptions. It should be noted, however, that labor supply considerations have at least indirectly influenced

Table 12

Projections of the Experienced Civilian Labor force, by Census Occupation Group: Actual, 1970; Projected, 1980 and 1985

Census Occupation Group	No. (millions)			Percent distribution			Percent change		
	1970	1980	1985	1970	1980	1985	1970-85	1970-80	1980-85
TOTAL	75.1	91.5	97.5	100.0	100.0	100.0	29.8	21.8	6.6
White-Collar Workers:									
Professional and technical	10.6	15.1	17.6	14.2	16.5	18.2	65.8	41.4	17.2
Managers and administrators	6.4	8.4	9.5	8.5	9.1	9.7	47.5	30.2	13.2
Sales workers	8.0	9.9	10.2	10.7	10.8	10.4	27.2	23.2	3.2
Clerical workers	11.8	15.4	16.6	15.7	16.9	17.0	40.5	30.5	7.6
Blue-Collar Workers:									
Craft and kindred	10.5	12.2	12.8	13.9	13.3	13.1	21.9	16.4	4.7
Transport operatives	2.7	3.0	3.0	3.6	3.3	3.0	9.5	10.3	-0.7
Operatives (exc. transport)	10.3	11.5	11.8	13.7	12.6	12.1	14.8	11.9	2.6
Nonfarm laborers	3.4	3.8	3.6	4.6	4.1	3.7	6.0	9.0	-2.8
Service workers, total	8.6	9.9	10.1	11.4	10.8	10.3	12.1	14.9	1.9
Farm workers, total	2.7	2.5	2.4	3.6	2.7	2.4	-13.0	-9.3	-4.0

the BLS occupational estimates, to the extent that past shifts in unit labor requirements and in occupational staffing patterns for particular industries have been influenced by the relative supply of labor for these industries and occupations. In effect, however, the BLS methodology assumes that these forces will tend to operate in the same manner in the future, as in the past, and makes no direct allowance for the effect of changes in exogenous labor supply factors, such as those described in the preceding section. For this reason, it seems appropriate to compare these "demand-oriented" projections with our own estimates of the expected supply of workers by broad occupational group, as a means of identifying prospective occupational imbalances.

The resulting employment projections by occupational status group for 1980 and 1985 are expressed as percentage changes, in table 13, over corresponding BLS estimates for 1970, rather than in absolute numbers, mainly because the latter represent annual average employment estimates, comparable with CPS levels, whereas our projections of the experienced civilian labor force have been adjusted for comparability with decennial census data, exclusive of workers whose detailed occupations were not reported.

The comparisons for the entire period 1970-85 in table 13 indicate a large potential surplus of available workers for group I occupations resulting from a projected labor force growth of 66 percent compared with 51 percent in projected employment. At the lower extreme of the job structure, the growth in potential requirements for group IV and group V occupations is expected to exceed the projected growth of available workers by 6.4 and 2.6 percent, respectively. The trends for the two intermediate occupational studies groups--groups II and III--are in closer overall balance.

The disparity between a projected "surplus" of workers in high-level jobs and a "shortage" in lower level jobs, is more clearly evident in the comparisons for the 1980-85 period. Both the groups I and II occupations are expected to experience a more rapid growth in labor supply than in jobs; while groups III, IV, and V would all experience deficits in labor force growth compared with projected job needs.

Similar comparisons of projected labor force and employment trends are presented in table 14 based on the standard census occupational groups. These comparisons indicate wider divergences between labor force and employment growth rates between 1970 and 1985 than those based on our broader status groupings. Among the white-collar occupations, labor supply growth is expected to substantially exceed employment growth in three groups--professional and technical workers, nonfarm managers, and clerical workers. Labor force growth, however, is expected to lag behind demand in the case of sales workers, reflecting the large projected employment growth in this occupational group, as well as the fact that our labor force projections indicate a somewhat

Table 13

Comparison of Projected Percentage Changes in Labor Force and Employment by Major Occupational Status Group, 1970-85

	Experienced civilian labor force			Employment 1/			Difference (ECLF-Employment)		
	1970-85	1970-80	1980-85	1970-85	1970-80	1980-85	1970-85	1970-80	1980-85
TOTAL	29.8	21.8	6.6	29.3	21.0	6.1	0.5	0.8	0.5
Group I	65.8	41.4	17.2	50.5	35.0	11.6	15.3	6.4	5.6
Group II	40.1	28.9	8.7	41.3	32.3	7.0	-1.2	-3.4	1.7
Group III	21.1	16.2	4.2	19.0	13.0	5.4	2.1	3.2	-1.2
Group IV	11.9	11.2	0.7	18.3	14.3	4.1	-6.4	-3.1	-3.4
Group V	2.9	5.9	-2.8	5.5	7.0	-1.3	-2.6	-1.1	-1.5

1/ Adapted from unpublished BLS projections of detailed occupation by industry, compatible with December 1973 BLS labor force and employment projections.

Table 14

Comparison of Projected Percentage Changes in Labor Force and Employment: 1970-85, by Census One-Digit Occupation Groups

Census Occupation Group	Percent changes, 1970-85								
	Experienced civilian labor force			Employment 1/			Differences		
	(1) 1970-85	(2) 1970-80	(3) 1980-85	(4) 1970-85	(5) 1970-80	(6) 1980-85	(1-4)	(2-5)	(3-6)
EXPERIENCED CIVILIAN LABOR FORCE	29.8	21.8	6.6	29.6	23.3	5.9	0.2	-1.5	0.7
Professional, technical, and kindred	65.8	41.4	17.2	53.3	35.3	13.3	12.5	6.1	3.9
Nonfarm managers	47.5	30.2	13.2	27.4	22.5	4.0	20.1	7.7	9.2
Clerical workers	45.5	32.5	9.8	33.3	29.2	3.2	12.2	3.3	6.6
Sales workers	27.2	23.2	3.2	44.0	30.8	10.1	-16.8	-7.6	-6.9
Craft workers, foremen, and kindred	23.6	17.5	5.2	30.2	22.2	6.6	-6.6	-4.7	-1.4
Operatives (including transport)	18.3	15.8	2.2	13.8	11.6	2.0	4.5	4.2	0.2
Nonfarm laborers	7.4	10.3	-2.6	6.0	6.0	0.0	1.4	4.3	-2.6
Service workers	17.1	14.9	1.9	33.1	26.2	5.5	-16.0	-11.3	-3.6
Farmworkers, total	-19.3	-12.1	-8.2	-41.9	-27.3	-20.0	22.6	15.2	11.8

1/ 1970 employment data by occupation group based on unpublished BLS estimates adjusted for comparability with published estimates since January 1971, based on revised occupational classification and enumeration procedures.

less-than-average growth in supply. The latter is attributable mainly to the reduced labor force growth of youth and women, who have staffed a large proportion of the lower paid sales jobs in recent decades.

In the case of the remaining census occupational groups, these comparisons suggest prospective deficits in labor force growth in two occupational groups, service workers (-16.0 percent) and craft workers (-6.6 percent), in contrast to a projected large surplus of farmworkers. In the latter occupational group, this is a consequence of a projected sharp reduction, of 41.9 percent, in farm employment, compared with a smaller projected reduction, of 19.3 percent, in our farm labor force estimates.15/ The comparisons for the two remaining occupational groups--operatives and nonfarm laborers--suggest a closer correspondence between labor force and employment trends for the entire 1970-85 period than for any of the other census major occupation groups. However, in the case of nonfarm laborers, a projected "surplus" in labor force growth during the 1970-80 period of over 4 percent would be reversed in the 1980-85 period, reflecting the reduced number of younger workers available for such jobs.

RELIABILITY OF OCCUPATIONAL PROJECTIONS

The extent to which the above comparisons provide a meaningful indicator of possible future labor market difficulties depends, in part, upon the degree of confidence that can be placed on any longer term projections of labor demand, as well as of labor supply, by occupation. It is therefore moot to inquire into the reliability of the BLS projections of employment, by occupation. Two sets of comparisons were made for this purpose: (1) A comparison between two recent BLS projections of employment by occupation for 1980 and (2) a comparison between the current projection for the entire decade of the 1970's with actual employment trends in the period 1970-74.

The initial comparison indicates the difference in projected annual growth rates for 1970-80 between BLS projections published in 1970 and using 1968 data as a point of departure and those published in December 1973 and based on actual data for 1972. These are shown in table 15 for 9 major census occupation groups. It will be evident that the differential pattern of projected employment growth by major occupation remained fairly consistent. Notably, most white-collar groups--as well as service occupations--were expected to experience above-average employment growth under both projections; craft workers were expected to grow at a rate identical with that of total employment in each case; while the other occupational groups, including operatives, nonfarm laborers, and farmworkers, were expected to experience below-aveage growth or to decline. The differences in projected annual growth rates between the two sets of projections were 0.4 percent or less for 5 of the 9 major occupational groups; on the other hand, they were quite large for nonfarm laborers and farmworkers, -1.2 and -1.3 percent, respectively.

Table 15

Annual Employment Growth Rates by Occupation Group: Comparison of Bureau of Labor Statistics Projections for 1970-80 and Actual Employment Trends, 1970-74
(Annual Rates)

Occupation Group	BLS projections 1970-80*		Actual employment change 1970-74*	Differences	
	1970 projections	1973 projections		1973 projections minus 1970 projections	Actual change 1970-74, minus 1973 projections
TOTAL	1.9	2.0	2.2	0.1	0.2
Professional and technical	3.4	3.1	2.7	-0.3	-0.4
Managers, nonfarm	1.4	1.7	1.3	0.3	-0.4
Sales	1.7	2.6	2.7	0.7	0.3
Clerical	2.3	2.7	2.4	0.4	-0.3
Craft and kindred	1.9	2.0	3.5	0.1	1.5
Operatives, incl. transport	1.0	1.1	0.9	0.1	-0.2
Nonfarm laborers	-0.1	0.6	0.8	0.7	0.2
Service workers	3.0	2.4	3.1	-0.6	0.7
Farmworkers	-1.8	-3.1	2.6	-1.3	5.7

*Sources: Actual employment by occupation group for 1970 and 1974 from Manpower Report of the President, April 1975, Table A-15. BLS projections for 1980 from Tomorrow's Manpower Needs, Vol. IV (revised 1971), BLS Bulletin 1737, Appendix 1 and from Neal Rosenthal, "Projected Changes in Occupations," Monthly Labor Review, December 1973, p. 19. For computation of annual rates based on the 1973 projections and of actual changes, 1970-74, revised employment estimates for 1970, comparable to 1970 Census classifications, were used, based on unpublished BLS data. All annual rates were computed by the author.

A second set of comparisons shows the difference between the projected annual growth rate between 1970 and 1980, based on the most recent 1973 projections and the actual rate in the period 1970-74. To make this comparison, it was necessary to revise the originally reported CPS employment data by occupation for 1970 to allow for the effects of revisions in occupational classification and enumerating procedures, similar to those in the 1970 census that were introduced into the Current Population Survey in 1971. These are necessarily subject to some error. Allowance must also be made for the difference in time periods and for the fact that 1974 marked the onset of a major economic recession. The degree of variation between actual employment trends between 1970-74 and those projected for the entire period 1970-80 (using 1972 as a base year) was therefore considerably greater than in our first set of comparisons. Nevertheless, the actual annual rate of employment change deviated by 0.4 points or less for 5 of the 9 major occupational groups. Among the white-collar groups, the managerial group grew at a substantially greater than projected rate during this period and the clerical and sales groups at somewhat lower rates than projected. Among those census occupation groups including large concentrations of lower level jobs, the rate of employment decline among farmworkers was much less than projected and employment of nonfarm laborers increased at a somewhat greater rate than projected, while employment trends in two other major groups--operatives and service workers--corresponded closely to the projected trend.

Despite the limitations of the above comparisons, they do provide some confirmation of the broad differentials in growth rates reflected in the longer term BLS employment projections by occupation. In fact, if the most recent trends can serve as a guide, the economy's demand for workers in certain low-level occupational groups, such as farmworkers and nonfarm laborers, may be somewhat greater than indicated in the 1973 BLS projections.

At the same time, the hazardous nature of longer term manpower projections will be quite evident. The most critical uncertainty lies, of course, in the extent of deviation of aggregate economic activity from a full employment path. In an economy burdened by an average unemployment rate of 8.5 percent in 1975, the most pressing labor market problems are clearly those resulting from inadequate demand for nearly all occupations, and this is likely to continue to be true so long as unemployment rates persist at or near recent levels. Even if satisfactory economic growth levels are restored later in the decade, such factors as increased costs of energy and other raw materials, as well as the scope and direction of federal energy programs, may significantly affect differential growth rates in particular industries and occupations. Until our longer term energy program goals and the direction of related economic and fiscal policies become more clearly defined, longer term economic and manpower needs projections will be subject to particularly wide margins of uncertainty.

LABOR MARKET IMPLICATIONS

The hazards of longer term projections of manpower demand are compounded when such projections are in turn used as a basis of comparison with projections of potential labor supply by occupation. The limitation of the latter projections include--particularly--our limited knowledge concerning the adaptability of the labor force to conditions in which relative surpluses of workers develop for the more desirable, higher status occupations in contrast to potential deficits in lower status jobs.

Despite these difficulties, the broad imbalance between the occupational distribution of the labor force implied by our demographic-based projections and that resulting from projections of labor demand by occupation under "full employment" conditions does suggest that some significant adjustments may be required. Our review of recent 1970-74 experiences, as well as the inherently conservative assumptions underlying our demographic-based projections of labor force by occupation status group, suggests that the resulting comparisons may well have understated, rather than overstated, the potential for future imbalances under full employment conditions.

The nature of the resulting adjustments in turn can be expected to depend upon the respective elasticities of supply and demand for labor in particular industries and occupations. If the supply of labor for a particular occupation is highly elastic, a relatively small differential increase in wages would attract the additional workers needed. On the other hand, if the supply of workers is relatively inelastic and employers are not in a position to substantially increase relative wage levels or to modify conditions of work to make these jobs more attractive, employment will be reduced. In the latter case, the needs of the economy may still be met in a variety of ways: By product substitution, by substitution of capital for labor, by changing the skill-mix of workers required to produce particular goods or services, by industrial relocation, or by increased reliance upon imports. Other possible adjustments include modifications in employer recruitment and selection standards, increased use of part-time workers, relaxation of immigration restrictions upon entry of "low-level" manpower or by an increased inflow of illegal aliens.

We can anticipate, based on past experience, that, to the extent needed, some combination of these forms of adjustment will occur over a period of time and that the particular path taken will vary from industry to industry, and from area to area, depending upon a number of economic, social, and technological variables. Some insights as to their possible direction can be derived both from our previous analysis of the sensitivity of relative wages to various labor supply factors and from a more detailed review of recent experience in selected lower level occupations in the following chapter.

VII. ALTERNATIVE PATTERNS OF LABOR MARKET ADJUSTMENT: FOUR CASE STUDIES

INTRODUCTION

In chapter IV, we described the efforts to deduce, through analysis of time series and cross sectional data, the impact of sociodemographic variables and of related labor supply variables upon relative wages and labor markets.

To provide some additional insights of the latter type, we selected four occupations for more intensive examination on a "case study" basis. These are: Household maids, construction laborers, apparel operatives, and hospital attendants. In each of these occupations, we have examined relevant data on the characteristics of the occupation, recent employment and wage trends, and changes in labor force composition. The interaction of these and other factors has been analyzed by use of econometric models, where applicable. On the basis of these analyses and of projected trends in labor force growth, some inferences have been made concerning future employment and wage trends.

HOUSEHOLD MAIDS

Occupational Characteristics

Household maids, or domestics, are defined in this report to include persons working for hire in private households in performance of cleaning, laundering, cooking, routine child care, and other personal care services and related household duties. All but a small percentage of household workers are women; hence, it has been convenient to limit our analysis to women household workers or "maids." Babysitters who do not perform other household duties have also been excluded from this analysis because of the distinctive labor supply source for this activity (predominantly white teenage youth) and because of its typically casual nature.

Household maids fall at or near the bottom of the occupational hierarchy in terms of most available criteria, such as low earnings, general absence of formal training or educational requirements, the absence--until recently--of any forms of governmental regulation of hours, wages, or working conditions, and the low prestige of the occupation.

The low social status of domestic service in the United States and its general identification as a "menial" occupation has also in part been directly attributable to the composition of its work force. In

1910, when immigration was at its peak, more than a fifth of the female servants were foreign born, with a particularly high concentration of women of Irish and Scandinavian origin. Over one-third were Negro, and over two-fifths of all Negro women workers were in this occupation. With the cessation of large scale immigration after World War I and the beginning of the mass movement of the black population from southern farms to northern cities, black women became the most important single labor supply source for domestic labor, particularly in the larger cities, where a large proportion of these jobs was concentrated. By 1930, nearly one-half of all female domestics were Negro, while the foreign-born proportion had declined to less than 15 percent. The concentration of Negro women in the domestic service labor force became even more pronounced after World War II. By 1970, fully two-thirds of all female household workers (excluding babysitters) were nonwhite.

Employment Trends

Employment of household maids has declined sharply, although unevenly, in recent decades. Based on decennial census data, the number of private household workers, excluding babysitters, rose from 1,579,000 in 1900 to 2,413,000 in 1940, but then declined to 981,000 in 1970. In relation to the number of households the number of domestics fell from 9.9 per 100 households in 1900 to 6.9 in 1940 and to 1.5 in 1970. These comparisons, moreover, understate the true employment decline in this occupation in terms of full-time equivalent manyears due to the probably sharp reduction in annual hours of work per domestic worker, most of whom are now engaged in these jobs on a part-time basis.

Closer inspection of these trends suggests that both demand and supply factors have contributed to this long-term decline. From the demand standpoint, there has been a progressive growth in a wide range of substitutes for domestic servants, ranging from labor-saving household appliances and equipment and increased availability of commercial personal services, e.g., laundries and "quick-food" restaurants, to the extensive growth in preprocessed foods. Another contributing factor tending to reduce labor requirements for domestics was the long-term decline in family size, associated with the secular decline in birth rates.

However, not all demand-related factors would necessarily have been expected to reduce requirements for domestic service. Analysis of family expenditures data suggests that expenditures for domestic service tend to be moderately elastic in relation to size of family income. Other factors being equal, one would thus have expected an increase in employment of domestics to accompany the rising secular trend in family incomes--particularly in view of the increased participation of married women in gainful employment. Yet, the number of domestics in the labor force fell most sharply during the wartime decades of 1910-20, 1940-50, and 1960-70--periods characterized by sharp rises in wages, employment, and family income levels, as well as by pronounced

increases in participation of women in the labor force. In contrast, the number of domestics rose--both in absolute numbers and per household --in the 1920-30 and the 1930-40 decades. The trend during the 1930's, particularly, appears to be clearly associated with the sharp decline of alternative job opportunities for women during the Great Depression and the pressures upon them to contribute to family income in the face of pervasive unemployment and underemployment among male family members.

Collateral data also support an interpretation that the declining trend in household maid employment was induced, at least in part, by labor supply constraints. Based on BLS data, wage rates of domestics rose significantly more rapidly than did average hourly earnings of manufacturing production workers during periods such as 1939-48 and 1964-70, which were also marked by sharp reductions in household worker employment. Moreover, between 1960 and 1970, unemployment rates for all private household workers declined from 5.3 to 4.2 percent, whereas the unemployment rate for all women, 16 years and over, actually increased slightly, from 5.3 to 5.4 percent, between these 2 years.16/ If reduced employment of domestics had been solely due to curtailed demand, a decline in relative wages and an increase in relative unemployment for this occupation would have been expected.

The limited evidence from time series data is thus consistent with a hypothesis that the demand for domestics is highly elastic in relation to the relative wages of domestics and that, given the competitive market for domestics, both wage rates and employment of domestics have been particularly sensitive to supply conditions. In turn, the supply of domestics--given the low wages and the low status of the occupation--has been significantly influenced both by general labor market conditions and by changes in the availability of disadvantaged labor supply groups, such as poorly educated black women and recent immigrants, for this type of employment.

Cross Sectional Analysis17/--The market for the services of household maids has been more amenable to econometric analysis than that for other low-level occupations, mainly because it is a highly decentralized competitive market and because it is a "one-industry" occupation whose product consists entirely of labor services to private households. For the latter reason, the theory of consumer demand can--in principle--be directly applied to analysis of demand for household maid services.

The data base for this analysis consisted of BLS data on hourly wage rates for domestics and of census data on the other relevant variables for 40 SMSA's in 1960 and 1970.

The major findings of the supply analysis were that: (1) The supply of domestic maids varied positively, and significantly, with relative wages of domestics, compared with wages in alternative occupations; (2) the supply was also significantly greater in areas with higher proportions

of black women in the labor force, with particularly high elasticities in the southern cities; and (3) higher levels of AFDC payments were associated with reduced supplies of domestics, although with relatively low elasticities.

The major findings of the demand analysis confirmed the expected negative relationship between employment of domestics and domestic wages and a positive relationship between household income and employment of domestics.

Generally, the findings from the cross sectional analyses were most definitive in demonstrating the sensitivity of employment of domestic workers, both to relative wages in domestic service and to the availability (or nonavailability) of a supply of disadvantaged women, i.e., poorly educated black women, for this occupation.

Further insight concerning the relationship between employment of black women in domestic work and availability of alternative job opportunities for them is provided by data from the 1968 National Longitudinal Survey of women, aged 18 to 24 years. This survey found that among young nonwhite women not enrolled in school, less than 0.5 percent of those residing in large SMSA's (with a labor force of 500,000 or more) were employed as domestics, compared with 16 percent in medium-sized areas and to 22 percent in areas with less than 100,000 workers. The virtual disappearance of younger black women from the domestic occupation in large cities during the 1960's was probably associated with their higher educational attainment, compared with young black women in smaller cities and rural areas, with the more rapid expansion of job opportunities for them in clerical and other more desirable jobs in the larger metropolitan areas, and with the higher rates of AFDC payments available there.

On the basis of the above analyses, it is reasonable to assume a continued declining trend in employment of domestics, in combination with some moderate increase in their relative earnings under conditions of full employment. Among important specific contributing supply factors will be: (1) The continued decline in the number and proportion of poorly educated black women in the labor force, who have been a prime labor supply source for this work in recent decades; (2) the probable impact of the new Federal minimum wage for domestics, particularly in the South, assuming even a modest degree of enforcement; and (3) the probability that existing geographical differentials in AFDC payments will also narrow, thus again tending to reduce the currently disproportionate utilization of domestics in the South. On the other hand, any growth in the supply of poorly educated immigrants (legal or illegal) would tend to provide an alternative, although probably transitional source of workers for this occupation.

APPAREL INDUSTRY OPERATIVES

Introduction

Apparel manufacturing, in most respects, has been the prototype of low-wage industrial employment in this country. The term "sweatshop" had its origins in the description of working conditions prevailing in the small tenement shops that characterized the new factory clothing industry in the decades immediately preceding World War I. Although unionization and protective labor legislation have ameliorated many of the adverse features associated with the origins of this industry, apparel industry operatives still rank at or near the bottom of the job hierarchy among the major semiskilled operative occupations, as evidenced by their low average earnings, the virtual absence of formal training or educational entry requirements, and very limited promotional opportunities. However, the existence of a substantial degree of unionization in some sectors of the industry--typically those requiring a somewhat higher skill level--does provide somewhat higher earnings and status to apparel operatives, as a group, than to most low-skilled laborer and personal service jobs, as illustrated by the fact that our occupational status ranking places them at the low end of the group IV occupational status category, along with textile and leather products operatives.

The apparel industry, as a whole, is highly competitive. It is characterized by a basically simple and relatively static technology, low capital requirements, small firm sizes, and high rates of turnover among firms. Among the major branches of the industry, one distinct sector consists of the higher priced, fashion-oriented women's apparel industries. They are characterized by short production runs; they use highly diversified materials, and skilled operators generally still perform the sewing operations for a whole garment. Other components of the industry, which now account for a major portion of its total force, are more amenable to larger volume operations, as typified by such branches as men's shirts and work clothing. Firms in these branches tend to be larger and follow a "section system" of manufacture, in which each operator performs a highly specialized sewing task, requiring very limited skill or training.

The fashion-oriented branches have had, in common, a stronger centrifugal orientation, as evidenced by the fact that--despite accelerated outmigration--over one-half of total employment in women's outerwear industries was still concentrated in the three Middle Atlantic States of New York, New Jersey, and Pennsylvania in 1970. In contrast, the "volume" industries, such as men's shirts, have for a number of decades been concentrated in the Southeastern States and, typically, in smaller cities or rural communities, where they have been able to tap large reserves of low-wage female labor.

Employment and Labor Supply Trends--The early origins and growth of the factory clothing industry are inextricably bound with the history of immigration into the United States and particularly of the successive waves of Jewish immigration from central and eastern Europe. It was the poor Jewish immigrants from the ghettoes of Poland and Russia--many of whom had been employed as tailors or seamstresses in their countries of origin--who provided the initial supplies of cheap factory labor, both skilled and unskilled, as these industries expanded during the decades immediately preceding World War I.

Another aspect of the early labor supply for the apparel industry was the relatively large proportion of men initially employed in this low-wage field. In 1910, about 55 percent of all apparel industry workers were men. In succeeding decades, as the proportion of foreign-born workers declined, the apparel operative has become a predominantly female occupation. In 1970, 89 percent of all apparel industry operatives were women.

Unlike many other lower level industries, apparel manufacturing employed a relatively low proportion of Negroes until recent decades. The proportion rose, however, from 7.5 percent in 1960 to 10.2 percent in 1970, according to census data. One factor contributing to the relatively limited utilizaton of Negroes in this industry has been a continued reliance on other disadvantaged minority groups, notably those of Spanish origin, in areas where these groups are concentrated. In 1970, Spanish-origin workers accounted for 11 percent of the apparel operative work force--a much higher proportion than their representation in the employed work force as a whole.

Until the past decade, the apparel manufacturing industry had experienced a secular growth in employment, stimulated initially by the shift from home sewing or custom work to factory manufacture and subsequently by growth in population and real per capita income. The total number of production workers in apparel manufacturing rose from 819,000 in 1940 to a peak of 1,246,000 in 1966, according to BLS statistics. However, between 1966 and 1973, production worker employment in the industry declined by about 83,000, to 1,163,000, with reductions distributed among almost all industry branches, except men's and boys' furnishings.

This employment reduction, in the face of a continued upward trend in apparel purchases by American consumers, has been attributed to the sharp increase of imports during the past decade, primarily from low-wage countries such as Taiwan, South Korea, Hong Kong, Japan, and Mexico. The degree of import penetration has been generally greater for most categories of women's and girls' apparel than for men's clothing, and it has been greater for apparel items relying mainly on man-made fabrics, such as sweaters, blouses, and raincoats, than for those relying on

cotton, such as men's work clothing and underwear. Apparel items requiring higher-than-average degrees of skill and styling, such as women's dresses and men's suits on the other hand, have experienced smaller inroads from foreign competition, to date.

This massive influx of imports is clearly related to the much lower wage rates in the major apparel exporting countries, compared with those in the United States. Other contributing factors were the general shift from reliance on natural fabrics to man-made fabrics, the rapid post-World War II growth of the needed capital and entrepreneurial skills in the low-wage exporting countries and major recent strides in worldwide communications and air transport.

Recently, trade agreements negotiated since 1971 have established restraints on the growth of imports for wool and man-made fibres and apparel. These agreements, in combination with the effects of the 1974-75 economic downturn, appeared to have slowed down the growth of imports. Their longer term impact is, however, still uncertain.

Geographical Shifts in Apparel Employment--The significant recent shift of apparel production from domestic to foreign sources has been paralleled by a major geographical redistribution of the apparel industry within the United States. The availability of a large pool of cheap, easily trained immigrant labor had been a prime factor in the initial localization of major segments of the apparel industry in New York City and in other large eastern seaboard cities. This locational advantage was reduced, however, in the early 1920's as a result of the stoppage of mass immigrant inflows and by the growth of apparel unionism. Victor Fuchs, in his study of manufacturing location trends between 1929 and 1954, noted that two patterns of geographical redistribution were evident in the apparel industry during this period. "Those apparel industries that are heavily dependent upon the New York City garment center either for part of the production process or for styling and distribution tended to have their largest comparative gains in the states surrounding New York or in the South Atlantic states (e.g., women's and children's clothing). On the other hand, those industry branches which were very dependent on style, skilled labor and external economies (e.g., furs) showed no decrease in concentration in New York." Based on a multivariate analysis of 10 locational factors, Fuchs concluded that "the desire to avoid unions and to utilize the less expensive labor of the South appear to have been the major influences determining the direction of redistribution."18/

Prior to the 1950's, these shifts in geographical distribution were relatively gradual and coincided with continued strong secular growth in overall apparel manufacturing employment Beginning in the 1950's, however, the overall rate of apparel industry employment growth slowed down appreciably and, at the same time, the rate of relocation accelerated

rapidly. As a result, employment in the New York apparel industry dropped severely both in absolute numbers and its share of the national total. Between 1950 and 1970, apparel industry employment in the New York SMSA declined from 311,000 to 173,000, while its share of total apparel employment fell by more than one-half, from 29.2 percent in 1950 to 14.2 percent in 1970. Similar, although less severe, reductions occurred in New England and in the Midwest. In contrast to this declining pattern in the North, the Southern States experienced a major expansion in apparel industry employment. Between 1950 and 1970, the number of employed apparel workers in the Southern States increased by about 280 percent, from 180,000 to 501,000, while their share of total apparel employment rose from 16.9 to 41.1 percent.

The root causes for the massive geographical redistribution of apparel industry employment are by almost all accounts associated with the geographical differentials in wage rates and in labor costs in this highly competitive, labor intensive industry. The extent of these differentials is illustrated by the following comparisons, based on recent BLS wage surveys.19/

· In the women's and misses' dress manufacturing industry, among 12 cities surveyed, average hourly earnings of section-system sewing machine operators in August 1971 ranged from lows of $1.88 in Miami and $2.03 in Dallas to highs of $2.83 in Chicago and $3.22 in New York City.

· In the men's and boys' suit and coat manufacturing industry, average hourly earnings of sewing machine operators, in April 1973, ranged from a low of $2.64 in the Southeastern States to a high of $3.52 in the Middle Atlantic States.

· In the trouser manufacturing industry, hourly earnings similarly ranged from $1.84 in North Carolina to $2.55 in the Middle Atlantic States.

Regional wage differentials alone cannot, however, fully explain the sharp and sustained migration of the apparel industry in the past two decades. Such differentials existed in earlier decades as well. It seems probable that the high rate of out-movement in recent years has been prompted by a number of additional economic and locational factors, including the increased postwar concentration of raw materials sources (particularly the new synthetic textiles plants) in the Southern States, the heavy competitive pressures upon the domestic apparel industry stemming from increased foreign competition and the rapid extension of our national highway network (thus reducing the need for market proximity).

In addition, there is considerable evidence that labor factors--other than those directly reflected in wage rate differentials--may

also have played an important role. The two major unions in the apparel industry--the ILGWU and the ACWA--have been a dominant force in New York and other major northern and midwestern apparel manufacturing centers. They have, however, met with limited success in organizing workers in the cities and towns of the South, as well as in some of the "out-of-town" districts in Northern States. This has not only served to perpetuate regional wage rate differentials but has given employers in the established centers the further motivation to relocate in order to escape from a whole range of related constraints under collective-bargaining agreements. Additional considerations, noted in recent press articles, include rising crime in the New York garment district and related problems of congestion, high rentals, and urban blight. These problems appear to have been compounded in the late 1960's by evidence of considerable labor recruitment difficulties in the metropolitan apparel industry, even in the face of declining employment levels.

Apparel Labor Market Contrasts: New York SMSA vs. North Carolina--In order to provide additional insights on labor market factors influencing the relocation of the apparel industry and related labor supply implications, two apparel manufacturing areas were selected for comparison: New York City SMSA and North Carolina. Between 1960 and 1970, total apparel industry employment, as reported in the decennial censuses, declined by more than one-third in the New York City SMSA, from 255,000 to 173,000; it nearly doubled in North Carolina, rising from 33,000 to 63,000.

In New York, the apparel industry work force has included an exceptionally large proportion of older workers, as evidenced by a median age (for women employees) of 45 years in 1960. Moreover, relatively few younger workers entered the New York apparel industry in the following decade. As a result, the median age of New York female apparel workers rose by nearly 3.5 years to 48.4 years, compared with a decline of about one-half year in the median age of all employed women in the New York area. In contrast, the apparel industry work force in North Carolina has consisted predominantly of younger women, and the median age of women employees there rose by only one year between 1960 and 1970.

These contrasts in age structure are to be expected, to some extent, in any comparisons of declining and expanding industries or occupations. However, in combination with collateral information about recruitment difficulties experienced by New York apparel manufacturers in the late 1960's, they do suggest that reluctance of younger workers to enter this industry may have contributed in some degree to the reduction in apparel employment in the New York areas.

The trends in racial composition of the apparel work force in these two areas also show a significant contrast. In New York, the percentage of nonwhite workers rose only slightly, from 11.2 to 11.7 percent, between 1960 and 1970. In North Carolina, the percentage of nonwhite

workers rose sharply, from 4.6 to 16.2 percent. This sharp increase paralleled the experience of most Southern States in this industry, with the exception of those with large Spanish origin or other white "ethnic" populations, such as Florida, Texas, and Louisiana.

Several explanations have been offered for the relatively limited growth in the percentage of nonwhites in the New York apparel industry, i.e., the general contraction in job opportunities in the industry, apparent employer preferences for Puerto Rican workers (who accounted for about the same proportion of the work force there as did nonwhites), and the rapid growth of New York welfare rolls. In turn, the rapid growth in the nonwhite ratio in North Carolina and other Southern States has been attributed to a combination of rapid apparel industry employment growth and reduced availability of white women for these low-wage jobs--with some possible "assist" from the impact of Federal equal employment opportunity programs.

Interarea Differences in Apparel Employment Trends: An Econometric Approach

In an effort to broaden our assessment of the factors contributing to the recent geographical shifts in the industry, a number of econometric models were tested using the data base of large SMSA's, with 250,000 or more population, described in chapter IV. In these models, the dependent variable was the percentage change in apparel industry employment between 1960 and 1970. We postulated that the interarea variations in apparel industry employment growth were a function of:

(1) Apparel operatives' earnings, as approximated by full-year median annual earnings of female sewers and stitchers in 1969, in each area

(2) Median 1969 earnings of all women with earnings in each area

(3) Female unemployment rates in each area

(4) Average AFDC payments per family in each area

(5) The percentage growth in each area's total labor force between 1960 and 1970.

For the combined sample of 61 areas, our findings indicate that apparel employment growth was greater in areas of high unemployment, in areas where the ratio of apparel workers' wages to average public assistance payments was higher, and where labor force growth, generally, was more rapid. These factors explained nearly one-third of the observed variance and all were highly significant, at the .95 confidence level or above.

In the non-South areas, only two of these variables were significant--the unemployment rate and the labor force growth rate. In the Southern SMSA's, two variables proved significant in accounting for variations in apparel employment growth. These were the full-year median earnings of all women in the area's labor force, which proved strongly and negatively correlated with apparel employment growth, and the relationship between apparel workers earnings and AFDC, which was positively correlated with employment growth.

Some of the specific findings stemming from this analysis are summarized below:

(1) Apparel employers have moved differentially to areas where large reserves of low-wage female labor exist. This is indicated separately in the positive association between 1970 unemployment rates and employment growth in the non-South and the strong negative association between median earnings of all women and employment growth in the South. In the South, apparel employers have also moved into areas where AFDC payments are lower, in relation to apparel worker earnings.

(2) It is clear, too, that these separate labor market variables have had a differential impact upon intraregional differences in apparel employment growth. For example, the significant positive relationship to overall labor force growth in the non-South may be due to the greater relative growth in regional apparel markets in areas such as the West Coast, which continued to enjoy a relatively rapid rate of overall population growth during the 1960's.

(3) Similarly, the highly significant positive relationship between 1970 female unemployment rates in the non-South and apparel industry employment trends--and the absence of the relationship in the South--may be due, in part, to the fact that such unemployment rates did not provide a satisfactory measure of female labor reserves in the more rural South.

(4) Finally, we must assume that intraregional and interarea differences in product mix and in many other specific characteristics of area labor markets, e.g., proximity to textile and other material sources, also contributed to these locational trends but were inadequately reflected in our models.

Employment and Labor Supply Outlook

Population growth and projected longer term increases in real per capita income are expected to contribute to continued growth in consumer demand for apparel industry products. Based on these and related factors, the Bureau of Labor Statistics projected a 16 percent growth in apparel industry employment between 1970 and 1985 in its 1973 projections. The uncertain outlook for import competition, however, has made such longer term projections of domestic apparel industry employment particularly hazardous.

From the labor supply standpoint, our labor force projections do suggest, however, some prospective constraints on employment growth in the apparel operative occupation. Based on our projections of the labor force by occupational group, the number of women workers in all operative occupations (other than transport) is expected to increase by 14 percent between 1970 and 1985, compared with a BLS-projected increase of 16 percent in apparel worker requirements. The supply of women apparel operatives, moreover, can be expected to increase at a considerably lower rate than the average for all women operatives, in view of the low-wage and status ranking of this occupation. Thus, under conditions of high aggregative labor demand and of some stability in the level of apparel imports, the apparel industry may experience some labor recruitment difficulties in the 1980's similar to those evidenced in the late 1960's and early 1970's.

In view of the highly competitive nature of this industry and its geographic mobility, any squeeze on low-wage female labor supply for the industry in existing locations can be expected to prompt continued movements of the industry to remaining areas with reserves of low-wage female labor, as well as increased utilization of minority group workers, where available. Such factors as the rate of economic development of the Deep South, the extent of unionization, and the extent to which earnings of minority group women workers will "catch up" with those of other women will be important variables.

Enactment of recent welfare reform proposals, establishing minimum levels of welfare payments substantially above those now prevailing in many Southern States, would also tend to raise the "reservation" wage of women workers there. A national minimum welfare payment level could therefore have the effect of slowing down migration of apparel plants to low-wage communities and raising the relative wages of apparel workers, generally.

CONSTRUCTION LABORERS

Occupational Characteristics

From the era of the pyramids on, the construction laborer occupation has provided a historical prototype of heavy unskilled manual work, performed frequently under onerous conditions, by the lowest class or caste groups in society. A considerable, although unmeasured, proportion of all construction laborer jobs probably still correspond reasonably well to this description. However, the progressive introduction of mechanical, power-operated equipment for a wide range of specialized construction tasks has reduced the "backbreaking" aspects of many of these jobs and has imposed an increased requirement for at least a moderate degree of initial training. The latter types of jobs probably now constitute a

substantial proportion of all jobs performed by construction laborers and are often analogous in skill requirements to those performed by semiskilled operatives in many industrial occupations.

Some confirmation of the mixed skill composition of the construction laborer occupation is provided by the results of a 1963 Labor Department-CPS survey of occupational training of American workers. Only 13.4 percent indicated that no training of any type was needed for their occupation, compared with 18.4 percent of laborers in manufacturing occupations and 25.2 percent in nonmanufacturing occupations, other than construction.20/

The nature of the construction laborer job and the relative utilization of laborers compared with skilled workers vary considerably among the major branches of the industry. Private residential building, the large single component of the industry, is still conducted predominantly by small specialized contractor firms, whereas larger firms predominate in nonresidential construction and in public workers construction. The latter are more highly capitalized, make more extensive utilization of construction machinery, and--in turn--tend to have a lower relative requirement for construction laborers.

Despite these considerable intraoccupational variations, earnings of construction laborers, as a group, compare unfavorably with those in more skilled occupational categories. Of a total of 631,000 male construction laborers reported in the 1970 census, only 47 percent had worked for a full year (50-52 weeks) in 1969. Median earnings of "full-year" construction laborers were about 27 percent below those of full-year construction craft workers and 17 percent below those of male nontransport operatives. On the other hand, full-year construction laborers' earnings were about 1 percent higher than those of all nonfarm laborers and substantially above those of male workers in the personal service and farm laborer occupations included in our group V category. These earnings comprisons are thus quite consistent with our occupational status ranking of construction laborers at the upper range of group V.

Other characteristics of this occupation, too, have contributed to its relatively low status ranking. Construction workers have typically experienced the highest unemployment rates of any large occupational group in the labor force. Thus, in March 1970, 13.2 percent of construction laborers were unemployed, compared with unemployment rates of 8.2 percent for all nonfarm laborers and of 3.6 percent for all male workers in the experienced civilian labor force, 16 years and over. In addition, the construction industry is among the most hazardous of the Nation's industries, with work injury rates (in terms of man-days lost) nearly three times as high as the average for all manufacturing industries in 1970.

Employment and Labor Supply Trends--According to decennial census statistics, the number of employed construction laborers, during the

census survey weeks, declined from 663,000 in 1950 to 650,000 in 1960 and 601,000 in 1970. Over these decades, their proportion of the total male employed labor force fell from 1.62 percent in 1950 to 1.26 percent in 1970. In contrast, CPS statistics available for the past decade indicate a small increase in annual average employment of construction laborers, from 784,000 in 1960 to 812,000 in 1970, and a smaller decline in their proportion of total male employment, from 1.79 percent in 1960 to 1.65 percent in 1970.

Both the census data and the CPS/BLS annual data indicate, however, that construction laborers have declined relative to the total construction industry work force. This declining relative requirement for construction laborers is closely associated with major technological changes in the construction industry, including progressive substitution of power equipment for hand labor, the introduction of labor saving materials, the larger scale of construction projects, and the increased role of offsite assembly in the industry in recent years.

As in other low-level occupations, the labor supply for construction laborer jobs has been drawn disproportionately from the most disadvantaged elements of the labor force--recent immigrants, nonwhites and the least educated. In 1910, nearly one-half (49 percent) of all construction laborers were either foreign born or black. With the sharp reduction of immigration following World War I, the proportion of foreign-born white workers in the occupation dropped sharply in subsequent decades. They were replaced both by native white workers and by black workers. The proportion of black workers rose from 19 to 25.9 percent between 1910 and 1950, in contrast to a reduction in the proportion of white foreign-born workers, from 30 to 8.5 percent.

Construction laborers as a group have also been characterized by a low level of educational attainment. In 1960, only 19 percent of all construction laborers had completed 12 or more years of schooling, compared with an average of 47.6 percent for all experienced male workers and 21.1 percent among those in group V occupations as a whole.

The decade of the 1960's witnessed a significant shift in the composition of the construction laborer work force. Based on decennial census data, the proportion of younger workers, aged 16 to 24 years, in this occupation rose from 18.5 percent in 1960 to 26.5 percent in 1970. This increase was due entirely to an inflow of younger white men into construction laborer jobs, and--in turn--contributed to a particularly sharp increase in the proportion of high school graduates among construction laborers, from 19 percent in 1960 to 33.6 percent in 1970. At the same time, the overall proportion of nonwhites in the occupation fell from 29.6 percent in 1960 to 25.6 percent, reflecting relatively high withdrawal rates on the part of adult nonwhite men from construction laborer work. These trends continued through the early 1970's, based on available CPS data.

In summary, the period since 1960 has witnessed a significant transformation of the construction laborer work force from one staffed predominantly by mature men workers with low educational levels--and including a large proportion of blacks--to one increasingly reliant upon better educated white youth, particularly during peak seasonal periods of construction activity.

Earnings of Construction Laborers in Relation to Labor Supply Factors--In view of the wide observed regional differentials in relative wages for unskilled workers in the construction industry, we have attempted, through use of econometric models, to determine the extent to which labor supply factors have contributed to these variations. For this purpose, median annual earnings data, by SMSA, have been used as a "proxy" for actual wage rates or hourly earnings. The major portion of this analysis was based on published census data for 68 SMSA's with 250,000 or more population, used as the data base for the econometric studies described in chapter IV. Relative occupational earnings for construction laborers were computed separately, as a ratio to earnings of carpenters and to a "standardized" occupational wage level for each SMSA, based on an average of median earnings in selected male occupations in each SMSA, using fixed national employment weights. (See chapter IV.)

The various models tested postulated that relative wages of construction laborers were a function of:

(1) Certain characteristics of the occupational labor supply of each SMSA, i.e., the proportions of the occupation who were black, who were aged 16 to 24, or who had 12 or more years of education

(2) The percentage of the occupation that was unionized

(3) General labor market conditions in the SMSA as measured by relative unemployment rates for construction laborers compared with those of carpenters and by the labor force participation rates for males aged 16 to 24

(4) Relative labor market opportunities for black workers, compared with white male workers, as measured by the respective proportions who were high school graduates in the SMSA and by the ratio of median annual earnings of black males to white males in the SMSA.

Certain of the models also introduced additional possible explanatory variables, such as the proportion of construction contracts awarded for nonresidential vs. residential construction, the proportion of the SMSA labor force employed in higher wage industries, and the proportion of construction laborers who were of Spanish origin.

Our hypothesis, generally, was that differential concentrations of youth and of blacks in the occupation as well as higher relative unemployment rates in the occupation would tend to depress relative wage rates for construction laborers, whereas such factors as a higher concentration of better educated workers, greater relative economic opportunities for black workers, and a greater degree of unionization in the occupation would tend to raise relative wage rates. Major findings of these studies are summarized below:

1. Labor supply factors, in combination with the unionization variable, were found to explain a major portion of the inter-SMSA differences in relative earnings of construction laborers, as indicated by coefficients of determination ($\bar{R}2$) of .641 and .774 on alternative formulations of this model. These coefficients are considered very satisfactory for cross sectional models of this type, particularly in view of inherent limitations of the available data base. They were superior to similar coefficients derived from our analyses of inter-area differences in relative wages in other selected low-level occupations.

2. In the model using the ratio of earnings of construction laborers to those of carpenters as a dependent variable, we found that --both for the full sample of all SMSA's and for the non-South SMSA's, separately analyzed--the most significant single explanatory variable was the relative education of black males to that of white males in the SMSA. Relative wages of construction laborers rose as the education of black men approached that of whites, with an elasticity at the mean of .30 in the overall model. Relative wage rates for construction laborers also tended to rise with the degree of unionization of this occupation relative to that of carpenters. Conversely, higher concentrations of younger workers in the occupation (relative to carpenters), as well as high relative unemployment rates for construction laborers, tended to reduce relative earnings of construction laborers.

3. In the model using the ratio of construction laborers' earnings to the standardized area earnings average, we also found that higher concentrations of youth and of black workers had a depressing effect upon relative wages, whereas higher concentrations of more educated workers as well as a higher degree of unionization (in the non-South) were associated with higher relative wages. A greater concentration of the male labor force in higher wage industries was also associated with higher relative wages for the construction laborers.

4. Finally, a comparison of cross sectional models for 1960 and 1970 was made, based on the ratio of median earnings of all construction laborers to those of carpenters. The most significant explanatory variable in these models was found to be the relative median earnings

of blacks to those of white male workers, which provided a measure of relative economic opportunity of blacks in the various SMSA's. The elasticity of this variable, moreover, rose from .34 in 1960 to .53 in 1970, suggesting more sensitivity of the unskilled-skilled wage differential in 1970 to reductions in labor market discrimination against black workers. Other variables found to be significant --but with much lower elasticities--were differential unemployment rates (1970 only) and percentage of black men in the labor force.

Factors Affecting Composition of Construction Labor Work Force

The preceding analyses demonstrated that interarea differences in the characteristics of the construction laborer work force (i.e., race, age, education), as well as other labor market variables, have been significantly associated with differences in relative earnings of construction laborers. A corollary of this analysis is an attempt to identify, in turn, the key factors that are associated with differences in the relative concentrations of blacks or youth in construction laborer jobs. The overall availability of workers with these characteristics for employment in lower level occupations is expected to change significantly in the coming decade--hence an identification of the factors contributing to their differential participation in a specific lower level occupation, i.e., construction laborers, may provide useful insights concerning their responsiveness to such inducements as increases in relative wages, if these are needed to attract additional workers.

In the case of youth, for example, it is relevant to know what factors have been most closely associated with the sharp increase in the proportion of youth employed as construction laborers during the past decade. Since the available time series data is very limited for such an analysis, we have attempted to derive some insights from analysis of our cross section of SMSA's in 1970. Simply stated, were the interarea differences in the proportion of youth in construction laborer jobs solely a function of differences in the proportion of younger workers in each area's labor force, or were other factors, such as differences in labor market conditions, in relative wages or in relative availability of "competing" labor force groups, also significant?

The empirical findings for the youth "concentration" equation indicate that, as expected, the percentage of youth in construction laborer jobs varied directly with their overall proportion in the SMSA labor force (elasticity, 1.33); that it was higher in areas where relative wages of construction laborers were lower (elasticity, -.55); and that it was lower in areas where more youth were neither in school nor at work. These findings in turn imply that the influx of youth into construction laborer jobs during the past decade was indeed a key factor checking the relative growth in construction laborer wages during the 1960's. Conversely, the projected decline in the percentage

of younger workers in the labor force--other factors being equal--can be expected to result in a somewhat more-than-proportionate reduction in their availability for construction laborer jobs and in an increase in relative wages. The findings also suggest the potential for increasing the supply of such youthful workers for construction laborer jobs by tapping the labor reserve of unemployed out-of-school youth.

The results from a second "concentration" equation--that for black workers--tend to confirm the relationship expected from "crowding" theories, i.e., that a high proportion of blacks, or other disadvantaged minorities, in a given population is associated with a lower relative wage for that occupation. However, the most important explanatory variables in this model are those that measure the relative economic status of black workers in various labor markets. The median earnings of black men relative to white men provides a useful index for this purpose. The relationship proved particularly significant in the non-South where a 1-percent increase in the black/white earnings ratio was associated with about a 2.5-percentage point decline in the concentration of blacks in construction laborer jobs. Conversely, the black concentration index shows a significant, but relatively inelastic, relationship to the ratio of black workers' earnings as construction laborers to earnings of all black workers. On balance, these relationships thus confirm the hypothesis that the proportion of black workers in construction laborer jobs will continue to decline as a result of narrowing of both the educational and income gaps between black and white workers.

Employment Outlook

Projections of construction industry output and employment, under full employment assumptions, generally anticipate substantial growth in this sector in the coming decades. The most recent BLS projections, issued in December 1973, indicate an increase in total contract construction payroll employment of 19 percent, from 4,352,000 in 1972 to 5,184,000 in 1985. In turn, BLS staff have projected an increase in employment of construction laborers from an annual average of about 870,000 in 1972 to about 1.0 million in 1985.

This BLS projection of growth in construction laborer requirements of about 15 percent between 1972 and 1985 can be contrasted with our projection that the number of men available for all categories of nonfarm laborer jobs will increase by only 5 percent between 1970 and 1985 (chapter V). More specifically, the analysis of recent trends in the construction laborer work force has revealed that employment in this occupation increased in recent years because of a large-scale inflow of younger white workers, offsetting the withdrawal of older men, particularly blacks--many of whom apparently progressed to higher wage, higher status occupations. Such factors as the generally high level of labor demand in the late 1960's, as well as rising educational levels and reduced discrimination against blacks in higher level occupations, contributed to the significant declines in participation of older men in this occupation.

If high aggregate employment levels are restored, these factors would again be operative. At the same time, the overall labor supply of younger men is projected to decline, beginning in the late 1970's, as illustrated by a projected reduction of 13 percent in the male labor force, aged 16 to 21 years, between 1980 and 1985. Moreover, a reduced supply of younger entrants into the labor force in the 1980's will tend to more than proportionately reduce the percentage of these younger men available for construction laborer jobs, in the absence of higher relative wages or other inducements. Thus, it is evident that, to meet the BLS-projected employment levels, construction employers will have to recruit a significantly higher proportion of the available low-level male labor force than in recent years. One of the consequences will be a probable resumption of the longer term trend towards narrowing of the unskilled-skilled labor wage differential in the construction industry.

It should be noted, however, that there is a very large potential for more effective utilization of available labor resources in this occupation, through increased mechanization, "decasualization" of the work force (as in longshoring), systematic efforts to reduce seasonality, and improved labor market organization--all of which should contribute to both a reduction of the chronically high unemployment rate in this occupation and to an increase in its attractiveness compared with other lower skilled jobs. Improved opportunities for on-the-job training and for upgrading of laborers to journeymen jobs would also increase the ability of employers to recruit younger men for this work.

In summary, therefore, our assessment suggests that if overall construction activity does expand, as indicated by recent projections, this will result in a considerably tighter labor market for unskilled construction labor in the 1980's than in the preceding decade and in a probable increase in relative wages for construction laborers. In addition, there are other socially desirable options that will be available to employers, organized labor, and labor market agencies to facilitate meeting these manpower needs.

HOSPITAL ATTENDANTS[21/]

Occupational Status--Hospital attendants perform a variety of duties requiring limited training that contribute to the comfort and care of patients in hospitals and other health facilities. They are at the lower end of the occupational hierarchy among health care personnel, working in a supporting role to registered nurses (RN's) and licensed practical nurses (LPN's).

By some criteria, hospital attendants fall near the low end of the occupational rank structure. Annual earnings of hospital attendants are lower than those of many other occupations in the group V category.

Many of the tasks performed by hospital attendants can also be regarded as unpleasant and dull, as illustrated by Studs Terkel's case study of one young nurse aide who described her duties as "makin' bed pans and rotten stuff like that."22/ The occupation is typically nonunionized and offers very limited promotional opportunities.

Yet, hospital attendants tend to rank higher than most other lower level occupations in both groups IV and V, in terms of the educational attainment of its work force and of prestige, as reflected in various surveys. The latter ranking is probably related, in part, to the higher social status generally associated with care of the ailing and the higher discipline and training required in a hospital environment. Thus, the occupational status of hospital attendants, based on our analysis of its labor force composition in 1960, places them at about the 20th percentile in the rank ordering of occupations--significantly higher than that of the three other occupations described in the preceding sections of this chapter.

Employment and Labor Supply Trends--Hospital attendants have also experienced more rapid growth rates than any of the other lower level occupations in our study. Based on decennial census data, the number of hospital attendants in the experienced civilian labor force has approximately doubled in each decade since 1940, growing from 102,000 in 1940 to 752,000 in 1970.

The major factor in this rapid growth during the 1960's was the overall expansion of employment in the medical and health services industry, as a result of the increasing hospitalization and health insurance coverage of the population, including the Medicaid and Medicare programs, of increases in real per capita income, and advances in medical technology.

Based on 1960 and 1970 census data, the primary sources of recruits for this growing occupation consisted of women workers, from a broad age range, and of younger white men, in the 16 to 24 year age group. The proportion of women among hospital attendants rose from 73.8 percent in 1960 to 84.6 percent in 1970. The median age of women hospital attendants dropped by only about 1 year, from 39.7 to 38.6 years, indicating a substantial inflow of mature, as well as younger women, into these jobs. Among male hospital attendants, the median age declined by 5 years, from 37.3 to 32.3 years, suggesting a significant out-movement of adult men, over the decade. The overall percentage of nonwhites in hospital attendants jobs increased over the decade, from 25.2 to 26.6 percent. An increase in the proportion of nonwhites among women in these jobs was partly offset by a reduction in the proportion of nonwhites among male hospital attendants.

These labor supply sources appear to have been generally adequate to meet employer recruitment needs. A number of health manpower studies

conducted during the past decade generally have not indicated any major recruitment problems for low-skilled hospital personnel, in contrast to severe shortages of registered nurses and licensed practical nurses. Confirming evidence is provided by the relatively large increases in wage rates for the latter categories of personnel, whereas hospital attendants experienced an average rate of wage increases over the decade, despite the sharp growth in their employment.

These trends, in turn, suggest that the relatively sharper increases in employment of hospital attendants than of trained nurses between 1960 and 1970 resulted from a reallocation of some duties, previously performed by nurses, to nurse aides and other hospital attendants, in view of the widening wage differential between the two categories of personnel and the increased availability of untrained women and youth.

Labor Market Factors Affecting Relative Employment and Wages of Hospital Attendants--The above inferences concerning the relationship between relative employment and relative earnings of hospital attendants --on the one hand--and the supply of workers for health attendants' jobs have been tested by use of a number of econometric models. Although precise variables used varied in each test, the general approach in all was based on the premise that, as in other "segmented" labor markets, the supply of workers available for work as hospital attendants is drawn disproportionately from certain population groups, e.g., nonwhites, youth, and women with limited education or specialized training. Such individuals have often had a restricted choice of working in a specific lower level occupation, such as hospital attendants (provided such jobs are available), of working in other lower level occupations, or of not working at all. Thus, to the extent that the employment of hospital attendants is a function of labor supply conditions and of relative wages, employment would be expected to be higher--relative to the total size of the hospital or health services industry--where the supply of such workers is greater and where alternative job opportunities (or nonemployment sources of income) are less attractive.

(a) Relative employment of hospital attendants--One model tested defined relative employment of female hospital attendants as the ratio of female hospital attendants employed in each area to total female employment in group IV and V occupations in that area. The model postulated that this was a function of total hospital employment, of relative wages of hospital attendants in the area, and of certain specified characteristics of the area's labor market. Relative employment of female hospital attendants was found to be significantly affected by a number of key labor supply variables. It was found to be higher in areas where relative earnings of hospital attendants were higher, where women constituted a larger share of the total labor force, where female unemployment rates were higher, and where the educational level of

women workers was above average. Their relative employment was, however, found to be lower in areas with a higher percentage of nonwhites in the labor force, possibly because total lower level employment tends to be higher in such areas, as a result of "crowding" of black workers in such jobs as domestics.

(b) Relative wages--A similar effort was made to determine the extent to which relative wages of hospital attendants, compared with those of other Group IV and V workers, were influenced by certain labor market characteristics. For women hospital attendants, full-year earnings were found to be significantly lower (relative to those in other group IV and V occupations) in areas with higher proportions of women in the labor force and to be significantly higher in areas with greater proportions of nonwhites. (The latter finding, which parallels the findings on relative employment, may also be due to the likelihood that, as the proportion of nonwhite women in an area's labor force increases, it is likely to exert a greater depressing influence on other, less desirable, low-level jobs in which they are "crowded" than it does upon hospital attendants, thus raising the relative wage for the latter.)

In the case of male hospital attendants, relative earnings were found to be significantly lower in areas where greater proportions of youth, aged 16 to 24, were in the labor force and significantly higher in areas with higher percentages of nonwhites and where public assistance payments to families were greater.

Variables such as educational level were found to be insignificant in both equations, as was the level of public assistance in the case of female hospital attendants. Also, the relative proportion of women in the labor force had no significant effect on relative wages of male hospital attendants.

(c) Relative concentration of youth--In addition to the above findings, based on the specific models described above, additional insights were derived from the more generalized low-level labor force models described in chapter IV. Most of the empirical tests of these models failed to prove applicable to the hospital attendants' occupation, partly--we believe--because of the higher status of this occupation, compared with others included in this comparative analysis. However, this approach did yield significant results in explaining interarea differences in the relative concentration of younger women, aged 16 to 24 years, in hospital attendants' jobs. We found that "youth concentration" among female hospital attendants was significantly higher in areas where relative wages of hospital attendants were higher (based on a broadly standardized area occupational wage measure) and where median annual earnings of full-year black women workers in 1969 more closely approximated those of white women. Youth concentration was significantly

lower, as might be expected, in areas where hospital attendant employment had grown less rapidly and also in areas with higher concentrations of Spanish-origin women workers. These variables in combination explained about one-third of the variance in the youth concentration variable.

* * * * *

One general observation based on these cross sectional studies is that both relative employment and wages have been found to be sensitive to some degree to relevant demographic labor supply variables as well as to other factors, such as area unemployment rates. The findings tend to confirm the hypothesis that the large inflow of women into the labor force during the 1960's was a key factor facilitating rapid growth in hospital attendants' employment, compared with other skilled health occupations, while tending to check the relative growth in wages for this occupation. The empirical evidence also tends to suggest that younger workers, mainly white, were substitutes for minority group workers in this occupation and were more likely to be employed in these jobs in areas where the proportion of minority workers was low and/or where earnings opportunities for minority workers were more favorable.

Employment Outlook

The longer range employment outlook for hospital attendants continues to be highly favorable. The BLS, in its 1973 projections, estimated an annual employment growth rate of 3.6 percent for hospital attendants between 1972 and 1985, more than twice the projected growth rate for total employment under full employment conditions. Enactment of national health insurance legislation would further enhance the prospects for a rapid increase in requirements for hospital attendants, as well as for other health service occupations.

The projected shifts in composition of the labor force over this period suggest, however, that hospitals and similar institutions may experience more difficulty in recruitment of personnel for hospital attendants' jobs, under existing relative wages, than they did during the past decade. One important consideration is a projected slowdown in the rate of labor force growth for women workers, who now comprise 85 percent of the labor force in this occupation. The BLS labor force projections indicate that women will account for only 46 percent of the increase in labor force between 1970 and 1985, compared with 60 percent of the growth over the 1960-70 decade. Moreover, as a result of reduced marriage and birth rates, a greater proportion of women workers will have had sustained periods of work experience and--to this extent--be less amenable to entering or remaining in low-skilled and, essentially, dead-end jobs, such as those of hospital attendants.

A further consideration is the projected reduction in the proportion of younger workers of both sexes who will be entering the labor force in the 1980's. As in other lower level occupations, younger men and women were an important labor supply source for hospital attendants' jobs during the past decade.

One favorable aspect of the labor supply outlook for this occupation is the fact that it appears to enjoy more prestige than most other lower level jobs. Hence, in spite of its low-wage structure, it was successful in attracting an increased proportion of nonwhite women, in contrast to the reduction in nonwhite ratios experienced in most other low-level (groups IV and V) service occupations. It is likely, however, that the younger nonwhite women will be less content to remain in this occupation in the absence of significant upgrading opportunities.

Although a definitive projection of the combined impact of these demographic and social trends upon the future employment and wages of hospital attendants is not possible, the direction of change, suggested by the preceding analyses, is for a probable increase in relative wages of hospital attendants in the 1980's, under conditions of high aggregate labor demand. Additionally, employers may be more motivated to modify their personnel practices to upgrade the status and working conditions of hospital attendants and to increase the present limited promotional opportunities of personnel assigned to these jobs.

VIII. THE OUTLOOK FOR LOWER LEVEL EMPLOYMENT: AN ASSESSMENT AND SOME POLICY IMPLICATIONS

MAJOR FINDINGS

The point of departure of the present study was the premise that workers in our society have a collective occupational preference schedule, in which jobs tend to be ranked in terms of desirability, based on the nature of the work performed, the rewards for this work, the conditions of work, and the prestige associated with the occupation. The empirical device for ranking occupations used in this study was the proportion of white workers with 12 or more years of education in each occupation, using data for the age group 25 to 34 years in 1960. This was based on the assumption that "preferred" workers, in terms of race and education criteria, made certain collective occupational choices, reflecting--in Adam Smith's words--the "sum of the advantages and disadvantages" of various kinds of work.

A historical review of the sources of labor supply for the "lower level" occupations--those in our groups IV and V categories--verified that these jobs had been disproportionately filled, in the past, by black workers, recent immigrants, and migrants from farm to city--both white and black. Youth and women had also contributed relatively high proportions of workers to many of these jobs. During the decade of the 1960's, the most dramatic shift was a large-scale movement of black workers from most of the lowest level (group V) jobs and their replacement by younger, better educated white workers, as well as by adult white women. An increased inflow of immigrants, mainly from nearby Latin American countires, as well as of Puerto Ricans, had provided a supplementary labor supply for these jobs in some areas.

The availability of these alternative sources of labor supply, in turn, probably contributed to the general stability of occupational wage differentials during the decade of the 1960's and to the absence of any significant overall labor shortages for lower level jobs. Notable exceptions were two very low-wage occupations, farm laborers and private household workers, which did experience increases in relative wages, concurrent with sharp employment reductions. Our analyses also found that relative wage differentials were sensitive, in varying degrees, to such labor supply factors as: (1) Differences in the proportion of black workers in certain lower level occupations and in relative labor market opportunities for such workers; (2) differences in availability of youth or part-time workers; (3) differences in overall unemployment rates; and (4) availability of alternative income sources.

From this perspective, we then attempted to assess the quantitative implications of prospective changes in growth and composition of the

labor force, to 1985, and of related trends for occupational labor supply in relation to available projections of labor demand, of employment, by occupation. These projections indicated that, in contrast to sharp projected increases in availability of workers for higher status, predominantly white-collar jobs, we can expect substantial reductions in the proportion of workers who will be available for the lower level groups IV and V jobs. Major factors contributing to these anticipated trends are the projected decline in the proportion of younger workers in the labor force, the continued increase in educational attainment of adult workers, and an assumed continued exodus of black workers from very low-status jobs.

Comparisons of these labor supply projections with recent BLS projections of employment by occupation, under full employment assumptions, resulted in potential "surpluses" of workers for higher level (groups I and II) occupations and potential "shortages" for lower level (groups IV and V) occupations.

The more detailed analysis of recent trends in four of the latter occupations was designed to identify the multiplicity of forces operating dynamically upon labor supply and demand in specific occupations or industries and to suggest the possible path of future labor market adjustment in each case. These analyses suggest that, to the extent that some lower level jobs become harder to fill, a number of options will be open, depending in part upon the elasticity of demand for such workers. In some occupations, such as domestics, we can expect a further employment decline. An increasing proportion of families will be obliged to seek substitutes for the services of paid domestics, either through "product" substitution, such as increased use of commercial services, or by simply doing more of their own household chores. Conversely, in the case of occupations such as construction laborers and hospital attendants, the more probable longer range outcome is for an increase in relative wages, accompanied by other efforts to make these jobs somewhat more attractive. In the case of geographically mobile low-wage industries, such as apparel manufacturing, adjustment may also take the form of continued shifts in the locus of production, either to States or regions containing residual reserves of low-wage labor or through increased reliance upon imports from low-wage countries.

POLICY IMPLICATIONS

If manpower projections are to be used as a guide to decisionmaking, they should meet certain standards of reliability and credibility. To illustrate, it is reasonable to ask: What is the reliability of the projections of labor demand in various occupations, given the large number of assumptions and economic variables that must enter into these projections?

One need simply review the actual fluctuations of unemployment rates in recent decades to recognize that any projection based on a full employment peacetime economy does not correspond with actual experience in all but a few years at best. However, if these projections are treated as contingent indicators of labor market trends that may emerge in the coming decade under conditions of high aggregate labor demand, we believe that they can be given considerably more weight. The most reliable parameter in our projections is the predictable sharp reduction in the number and proportion of youth and younger adults in the labor force of the 1980's--the population group that provided the greatest increment of manpower for lower level jobs in the past decade. Concurrent trends--such as the increase in occupational aspirations of minority groups, women, and more generally, all youth coming from lower income or disadvantaged backgrounds--have acquired sufficient momentum that they can and should be considered as irreversible forces in our society. The latter trends have, moreover, been treated rather conservatively in our manpower projection model. Furthermore, no explicit allowance was made for the implications of possible future changes in income maintenance policies upon future availability of workers for low-level jobs. For these reasons, these projections may well understate, rather than overstate, the potential need for future labor market adjustments in a high-employment economy.

The outlook, thus, points to the emergence of significant labor market strains, which can pose serious problems for some categories of workers had employers, as well as for those concerned with the efficient functioning of the labor market. At the same time, it can create a climate conducive to both private and public initiatives for reducing and/or upgrading low-level jobs in our society.

The heart of the dilemma that may be facing us is the sharp contrast between the limited demands and limited rewards of many jobs, as presently constituted, and the abilities, skills, and aspirations of the members of our labor force. To the extent that we approach such major national goals as sustained full employment and equal access to jobs, irrespective of race, sex, or social origin, the supply of workers available for the least desirable jobs will decline. The prospective decline in the number of youthful entrants into the labor force will further reduce the supply of workers for these jobs, particularly if the recent sharp downtrend in marriage and birth rates continues.

Some of the problems associated with these trends are already visible; others can be expected to become evident as we move into the decade of the 1980's:

- The better educated young workers who have recently entered the labor market, or who will be entering it in the coming decade, can expect increased competition in seeking preferred jobs, depending upon their area of specialized training, and may be

forced to stay in or accept jobs not utilizing their education. Recent surveys have indicated that over one-third of American workers consider that they are already educationally "over-qualified" for their jobs and that these workers have significantly lower levels of job satisfaction than other workers.23/ An acceleration of these trends, in turn, can be expected to intensify problems associated with poor worker morale.

· Minority workers and women, seeking a fair share of the preferred jobs, will face increased competition from "majority" worker categories with a consequent danger of increased confrontations on issues relating to equal employment opportunity.

· Although employers will have a greater choice of applicants in many professional, managerial, and other higher status occupational fields, they may be faced with high job vacancy and turnover rates--and with increased problems of poor worker morale--in low-skilled, low-status jobs.

· Public manpower agencies and employment services, whose primary clientele in recent years (prior to the current recession) consisted of youth and "disadvantaged" workers, could be faced with conflicting demands for their services on the part of better educated workers seeking placement in higher status jobs and of employers, who--on the other hand--may mainly need assistance in filling their lower level jobs.

· Institutions of higher education, already beset by serious financial difficulties, will be forced to reevaluate their educational programs and their enrollment prospects in the light of the altered labor market outlook for college-trained personnel.

It is possible, however, to view the projected labor force trends from a much more positive perspective. The declining flow of new entrants into the labor force in the 1980's can--of itself--aid in reducing unemployment rates, since youthful workers, as well as adult married women, contribute disproportionately to the overall volume of frictional unemployment. More specifically, a reduced supply of workers for lower level jobs can set in motion a number of labor market adjustments that most observers would consider desirable. In industries or occupations where the demand for low-status labor is wage-elastic (such as domestic service), a more restricted labor supply will create an inducement for substitution of capital or of alternative products or services, hence reducing the requirement for this category of labor. In occupations where demand is much less elastic in the short run, as is probably the case in such diverse occupations as construction laborers, hospital attendants, and farmworkers, the outlook is for a

significant narrowing of wage differentials, compared with more skilled occupations. Finally, in a tight labor market situation, a combination of employer self-interest and increased union pressures can make possible a number of other initiatives to raise the status of workers in low-level jobs, including measures to increase job security, improve working conditions, facilitate worker upgrading, and provide more flexible work schedules.

Some of the adjustments described above can be expected to develop as part of the normal process of decisionmaking by individual employers and workers in a free labor market. Other changes, particularly those involving significant realignments of wage structures and of personnel policies, are likely to be considerably slower, because of institutional obstacles or simple reluctance of employers and/or worker groups to change established practices. This suggests the desirability of a more active role by policymakers in government, business, and labor in creating a climate that will accelerate adoption of desirable changes.

NPA POLICY RECOMMENDATIONS

From this point of departure, the National Planning Association established in 1973 a Joint Committee on Lower Level Jobs, including in its membership representatives of business, labor, agriculture, and the academic community. The findings of the present study, as well as a number of related reports, provided a frame of reference for this assessment. Its recommendations were centered around a strategy that "should continue to encourage the elimination of these jobs where possible, through technological change, should seek to improve continuing low-status jobs by restructuring them, and should try to insure that no segment of society is unfairly relegated to the undesirable work which remains."24/ More specifically, the report recommended the following:

1. Restructuring of jobs, including: (a) Greater diffusion of responsibility and control among individual workers or teams of workers; (b) changes in work methods or work assignments in order to enlarge and diversify job contents; and (c) improvements of working conditions, including better work space, more flexible work schedules and extension of various amenities such as parking and lunch room facilities.

2. Increased utilization of "transitory" labor sources, such as student workers, for low-level jobs, through more flexible work scheduling, more flexible academic calendars, and work-study arrangements. Other labor supply sources that might be recruited through more flexible work scheduling include housewives available for part-time work and retirees.

3. Improvement of minimum wage and occupational health and safety standards, including their extension to any residual noncovered worker groups.

4. Training and job creation programs, particularly to assist the hard-to-employ in obtaining useful employment, as well as to assist in upgrading workers now in low-status jobs.

5. Continuing education programs to provide opportunities for upward mobility for midcareer workers stuck in low-level jobs.

6. Strengthening of measures to end job discrimination because of race and sex.

In addition to the above recommendations, 8 representatives of organized labor included among the signators of the statement, strongly advocated the more rapid unionization of workers now employed at low-level jobs as holding "the greatest promise of upgrading their status quickly," and also proposed amendments to the National Labor Relations Act to provide full coverage of all workers, to expedite its procedures, and to provide effective penalties for unfair labor practices.

From the above summary, it will be evident that any broad policy strategy for dealing with low-level employment can encompass a very wide range of specific approaches. Some of these proposed measures, such as job restructuring, improvement of work standards, and unionization, are designed to make such jobs more attractive, hence upgrading them from their present "low-level" status. One other proposal--for attracting additional "transitory" workers to these jobs--addresses the potential labor supply problem more directly. Still other proposals in this list--quite apart from their intrinsic desirability--would, however, have the effect of further diminishing the sources of manpower for these jobs.

Two other options were considered by the NPA Committee but unanimously rejected. The first was a modification of the existing immigration laws to make possible more flexible year-to-year quotas geared to anticipated manpower needs by occupation. This was rejected on the grounds that, in the long run, such a policy would exacerbate social problems by encouraging exploitation of low-wage workers, by adding numerous new individuals to the ranks of the disadvantaged who require society's support, and by adding low-wage competition to the U.S. work force. The second option was "to encourage some individuals to curtail or tailor their education to the needs of the labor market." The latter approach was rejected on the grounds that these "run counter to the democratic principle of providing maximum opportunity to all members of society, and they fail to recognize the noneconomic benefits of education as full preparation for full participation in our complex society."25/

The latter recommendation does not necessarily imply that there is no need for systematic restructuring of existing educational institutions and practices, in the light of both individual and social needs. Thus,

the Carnegie Commission on Higher Education, addressing itself particularly to the prospective labor market squeeze for future college graduates, recommended a systematic broadening of educational options to young people, generally, including: (1) Acceptable alternatives for formal college, such as improved program of postsecondary technical training, and (2) options to defer college entry, to step out from college in order to get service and work experience (including more opportunities for part-time enrollment), and to change directions while in college.26/

* * * * * * * *

In conclusion, it is appropriate to note some of the major limitations of available data and research relevant to this subject area. Comprehensive data on occupational labor supply and on occupational employment trends are only available--in the needed disaggregate form--from the decennial Censuses of Population. These suffer from serious limitations, particularly in view of noncomparability of data in successive censuses. Very limited information is available, too, on the flows of workers into and among occupations, on unemployment and job vacancies by occupation, and on occupational wage rates. Partly because of these data limitations, the amount of analytical research on occupational supply and demand factors has also been quite limited, with the exception of the more elite professional occupations.

In order to provide a reliable data base for assessment of changes in occupational labor markets, considerably more emphasis should be placed on systematic data collection programs in these areas by federal statistical agencies such as the Bureau of Labor Statistics and the Bureau of the Census. At the same time, there is need for development of more comprehensive models of the factors affecting employment and wage trends, by occupation and industry, in the light of prospective changes in the structure of the U.S. labor force.

Footnotes

1/ John R. Commons and associates, History of Labor in the United States, (New York: MacMillan and Company, 1935), p. 414.

2/ Commons, op. cit., p. 489.

3/ "Frederick Douglass' Paper," March 4, 1853, quoted in Leslie H. Fishel, Jr. and Benjamin Quarles, The Black American: A Documentary History, (New York: William Morrow and Company, 1970), p. 143.

4/ Don D. Lescohier, History of Labor in the United States, 1896-1932, Vol. 3, "Working Conditions," Chapter 2 (New York: MacMillan and Company, 1935).

5/ Peter M. Blau and Otis D. Duncan, The American Occupational Structure (New York: John Wiley and Sons, 1967), p. 270.

6/ James G. Scoville, The Job Content of the American Economy, 1940-1970 (New York: McGraw Hill, Inc., 1969), p. 67.

7/ 1971 Annual Report, Immigration and Naturalization Service, table 23.

8/ Hearings before Subcommittee No. 1 of the Committee on the Judiciary House of Representatives, 92nd Congress, 2nd Session, on Illegal Aliens, Part 5, March 1972, pp. 1323-1325.

9/ Statement by Leonard F. Chapman, Jr., Commissioner, Immigration and Naturalization Service, before the House Subcommittee on Immigration, Citizenship, and International Law, Feb. 4, 1975

10/ For a discussion of these longer term trends, see particularly: Paul Douglas, Real Wages in the United States, 1890-1920; (Clifton, N.J.: Augusta M. Kelley, reprint 1930); Lloyd G. Reynolds and Cynthia H. Tafts, The Evolution of Wage Structure (New Haven, Conn.: Yale University Press, 1956), pp. 355-358; and Melvin W. Reder, "The Theory of Occupational Wage Differentials," American Economic Review 45 (1955); pp. 833-852.

11/ Wages and Labor Mobility, (Paris: OECD, 1965), p. 16.

12/ Based on unpublished Bureau of Labor Statistics data, derived from Census of Population annual income surveys.

13/ Denis F. Johnston, "Education of Workers: Projections to 1990," Monthly Labor Review, November 1973.

14/ Jack Alterman, "The United States Economy in 1985: An Overview of BLS Projections," Monthly Labor Review, December 1973, pp. 4-5.

15/ It is probable that the BLS projection for farm employment will be substantially increased for forthcoming revisions, as a result of recent trends in agricultural production, prices, and employment.

16/ Manpower Report of the President, 1971-75. Washington, D.C.: U.S. Government Printing Office, tables A-16 and A-17.

17/ This section primarily summarizes findings by J. Peter Mattila in a technical paper, "The Labor Supply of Household Maids," which updates an earlier analysis appearing in the Journal of Human Resources, Summer 1973.

18/ Victor P. Fuchs, Changes in the Location of Manufacturing in the United States Since 1929 (New Haven and London: Yale University Press, 1962), p. 252.

19/ Monthly Labor Review, March 1973, p. 57; May 1974, p. 71; March 1972, p. 53.

20/ Formal Occupational Training of Adult Workers (Washington, D.C.: U.S. Department of Labor), Manpower Automation Research Monograph No. 2, December 1964, p. 45.

21/ Except as otherwise noted, data cited in this section are adapted from Neal Rosenthal and Dixie Sommers, "The Supply of Hospital Attendants," a separate technical paper prepared for this report.

22/ Studs Terkel, Working (New York: Pantheon Books, 1972), p. 471.

23/ Survey of Working Conditions (Ann Arbor, Mich.: University of Michigan, Survey Research Center, November 1970), pp. 407-409.

24/ Upgrading Low-Level Employment: A Major National Challenge (Washington: National Planning Association, February 1975), chap. 5, p. 13.

25/ Ibid., p. 12.

26/ See particularly, Priorities for Action: Final Report on the Carnegie Commission on Higher Education, New York: McGraw-Hill, 1973.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1976 O—210-882 (161)

OE 00815K

Where to Get More Information

For more information on this and other programs of research and development funded by the Employment and Training Administration, contact the Employment and Training Administration, U.S. Department of Labor, Washington, D.C. 20213, or any of the Regional Administrators for Employment and Training whose addresses are listed below.

Location	States Served	
John F. Kennedy Bldg. Boston, Mass. 02203	Connecticut Maine Massachusetts	New Hampshire Rhode Island Vermont
1515 Broadway New York, N.Y. 10036	New Jersey New York Canal Zone	Puerto Rico Virgin Islands
P.O. Box 8796 Philadelphia, Pa. 19101	Delaware Maryland Pennsylvania	Virginia West Virginia District of Columbia
1371 Peachtree Street, NE Atlanta, Ga. 30309	Alabama Florida Georgia Kentucky	Mississippi North Carolina South Carolina Tennessee
230 South Dearborn Street Chicago, Ill. 60604	Illinois Indiana Michigan	Minnesota Ohio Wisconsin
911 Walnut Street Kansas City, Mo. 64106	Iowa Kansas	Missouri Nebraska
Griffin Square Bldg. Dallas, Tex. 75202	Arkansas Louisiana New Mexico	Oklahoma Texas
1961 Stout Street Denver, Colo. 80202	Colorado Montana North Dakota	South Dakota Utah Wyoming
450 Golden Gate Avenue San Francisco, Calif. 94102	Arizona California Hawaii Nevada	American Samoa Guam Trust Territory
909 First Avenue Seattle, Wash. 98174	Alaska Idaho	Oregon Washington